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RAIL-ROAD NEWS.

Breaking of Railroad Car Axles.

A writer in the Journal of Commerce attributes the breaking of the axles of railroad cars to torsion, or twisting, occasioned in turning curves. The only effectual remedy for the evil is some method of securing an independent motion to opposite wheels, at the same time taking the strain off the axle.—This fact may afford a hint to the inventive genious of some of our mechanics.—[Exchange.

[The said writer might have saved his ink if he had been acquainted with his subject. The remedy proposed was patented and tried long ago, and instead of proving a remedy for safety, it increased the danger of running off the track.

New Locomotives.

Two large and powerful locomotives, with six feet eight inches driving-wheels, have recently been constructed at the locomotive works in Schenectady, for the Utica and Schenectady road, which are calculated to make the trip between that city and Utica in two hours, stopping twice. From the trial made they are found to equal expectations. The distance is not 80 miles.

Great Railroad Speed.

One of the engineers (James Baird) on Saturday week ran his locomotive, "The Tempest," on the Harlem Railroad, 103 miles in two hours and ten minutes, including three stops to take in wood and water. This was pretty quick running. The engine was built at the establishment of Rodgers, Ketchum & Grosvenor, Paterson, N. J.

A Great Locomotive Feat.

The Baltimore and Ohio Railroad company are now working a locomotive up a grade of 520 feet to the mile. This grade occurs at the great tunnel, where a temporary track has been laid over the mountain, for the purpose of transporting material for the road beyond, in advance of opening that work. The locomotive used weighs 24 tons, and the ordinary load attached to it, in addition to its own weight, is 12 tons. This grade has thus far been worked with regularity and safety. The whole power obtained is in the ordinary adhesion of the driving-wheels.

Explosion of a Mountain.

By the late news from Europe, an account is given of a singular catastrophe which had engulphed a chapel on a mountain in Siberia. Towards midday (date not stated) a report, as of thunder, was heard, and the summit of the mountain became suddenly enveloped in smoke. On the smoke clearing away it appeared that the chapel had been engulphed. No further particulars given.

Our Silver Currency.

A Bill is now before the Senate for the increase of the value of our silver coin relatively to gold. It is supposed that it will pass the House of Representatives almost unanimously, if it can get there.

EAYRS' PATENT STONE DRESSING MACHINE.---Fig. 1.

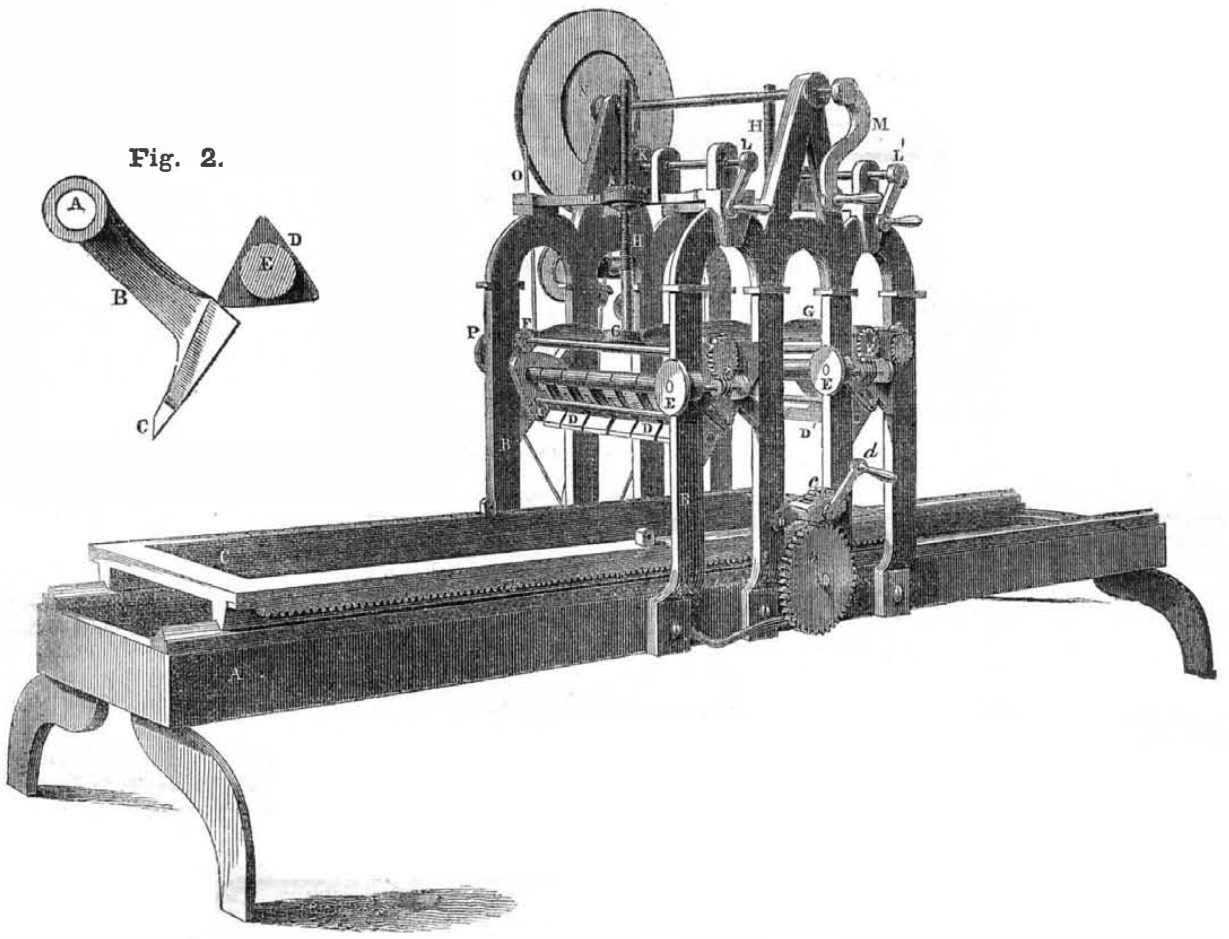

Fig. 2.

The accompanying engravings are views of the Stone Dressing Machine invented by William Eayrs, of Concord, N. H., and patented on the 4th Dec., 1849.

Figure 1 is a perspective view, and figure 2 is a side view of one of the chisels or cutters, and the cam which gives it a reciprocating chipping motion. A is the bed of the frame; it is made strong, and supported in the most suitable manner for the location where the machine is set up to work. B B are strong arched supports for the machinery. There are two sets of cutter chisels in the frame; they are operated exactly alike; the one set are placed behind the others, and are larger than the front set. The front set do the hard rough work, the hind set finish the stone with a beautiful surface. The bearings which support the cutters are sliding frames fitted snugly on each side between the two front and back arch supports, B. C is the bed on which the block of stone, granite, or marble is secured. It slides along and is fed forward to the cutters by rack and pinion gearing, *a b c d*, and this gives both the forward and reversing motion to the stone. This motion is for working by hand for the attendant, and shows the action; but, in a large machine, on the other side from the attendant, the forward and reverse motion is given by devices like those of iron planing machines; the stone stops moving when past the cutters, by a self-stopping, and then it has a reverse motion. D D are the chisels; they are hung on an axis. In figure 2, A is the axis, B the shank, C the cutter chisel; it is shaped almost like a boot; the edge of the chisel is like a stone cutter's broad hand chisel, and its action is the same as that by hand on the stone. Each set of cutters are hung on one axis across the frame, and each chisel is separate, and gets a separate slight blow on the back by the cam, D, on the shaft, E, fig. 2. The shape of the said cam is such that it gives the chisel three blows in one revolution. The cam is alike for both sets of cutters; it is a revolving roller, and is made with three projections for each cutter chisel, so that all the cutters are not struck at once, and this makes the machine work easy. The cutters are set so as to take only a small chip at each blow of the cam, but to take the blows very rapid; this saves the stone from splintering, and the cutters thus work better on hard stones or granite. The two side chisels are made to form sharpe fine edges, without flaws, on the sides of the stone. The axle or shaft on which the chisels are hung is fixed, but the cam shaft revolves. Both the chisels and cam frame can be elevated to any point for stones of any size. This is done by the screws, H H, for each cutter frame; these screws are sunk in sockets, G, secured on braces extending across and secured by bolts on the cutter frames. L L′ are crank handles, which turn spindles, on the inner ends of which are bevel pinions, K, (one behind, not seen); these pinions mesh into pinions, I (one not seen), which are nuts for the screws, H H, and which, when moved in one direction, turn the said screws so as to raise the cutters and cams for the purpose stated.

The chisel cutters can also be set at different angles, to cut more vertical or slanting, as may be required for stones of different hardness and of different natures. This is an important point of advantage, as some stones are very fractious, splintery, and hard to work; this arrangement, and the manner of striking the chisels with quick short blows, saves the face of the stone, economizes the power of the machine, and enables the cutters to work the hardest stones, granite, &c., with an ease and a beauty of finish that is scarcely possible to believe without seeing the machine in operation. The angle of the cutters is changed by the endless screws, which are turned by the heads, E E, and the screws move the wheels, E′ E′, on the spindles of which are other small pinions, F, (there is one on each end, inside the supports, but only one is seen) which mesh into sector cog plates, which are the bearing plates of the axles (A, fig. 2) of the chisel cutters. As the sector plates are turned, so is the angle of the chisels changed. The chisel and cam frames slide up and down between the standards, B B. The pulley, N P, and belt, O, are for giving motion to the cutters. By operating the cam roller shafts (E, fig. 2), which are placed behind the cutters, the cams strike downwards on the back of the chisels, as shown in fig. 2, and the action is like a great number of mallets acting alternately over the whole face of the stone, as easily on the stone as the hand chisel, and more accurately, and the amount of work which the machine is capable of performing, can only be limited by the power of the applied force. The cutting chisels (C, fig. 2) at the point are small, and are secured by nuts; this is not shown in the cut; but the cutters can thus easily be taken out and sharpened as cheaply and fast as hand chisels. The advantages of this machine are obvious; it dresses a true face on any kind of stone, without splintering or fracturing the surface. Its action is like a number of stone cutters, one set taking off the rough, and another behind finishing—all of them going over the stone at a tremendous pace, and acting on its surface in the best way to save it from splintering, and at the same time to make a most beautiful surface. It can dress the side of the stone, however narrow, as well as a broad stone, and this is a great advantage. One of these machines can be seen in operation at 138 Bank st., this city. This Stone Machine is owned by E. Chadsey & Co., of Troy, N. Y., or 62 William st., New York, assignees of Wm. Eayrs, and more information about rights, &c., may be obtained by letter addressed to them.

Vapor Baths Applied to Cattle.

A letter from Vienna states that for the last two years an epidemic disease has decimated the horned cattle, and brought ruin to the breeders; that the veterinery art was powerless to arrest the malady; but a Dr. Godlewske, a native of Gallacia, has recently claimed two premiums of 75,000f. each, offered by the Austrian and Russian Governments, he having, it is said, discovered an invaluable remedy in the application of vapor baths.

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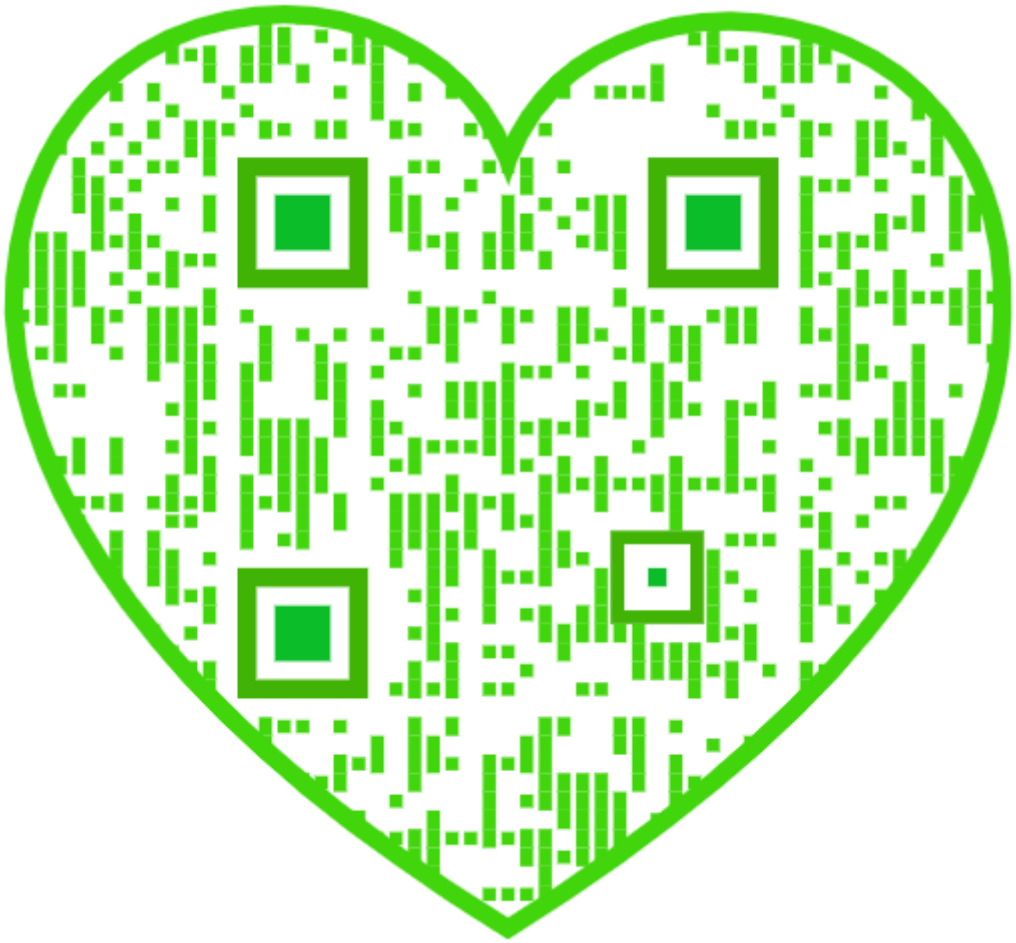

MISCELLANEOUS.

Foundations, Natural and Artificial.

Mr. C. Clegg, Jr., in a paper read to the London Institution of Civil Engineers, states that all appliances, it is thought, will be replaced in a few years, either by Mitchell's Screw Piles, or Potts' Pneumatic Cylinders, both of which have already been used with success on many large works. The former originated with the screw mooring, and has been successfully employed for the Fleetwood, the Belfast, the Maplin, and the Chapman Sand Lighthouses, and in several other places; for a pier at Courtown, county Wexford, for the staging for the breakwater at Portland, for the foundation of many railway bridges and viaducts, and for many other important works.

The latter was first applied to a bridge on the Chester and Holyhead Railway, in which the tubes were sunk by means of a double air pump, the pile sinking as the exhausting process was continued; nineteen tubes, each 12 inches in diameter, were thus put down, so that their heads were level, and to them a cast-iron plate was fixed, on which the pier was built. Experience has shown it to be advisable to make the tubes of greater diameter, so that now they are used 5 feet, and even 7 feet in diameter. In this case the simple exhausting process is not sufficient to overcome the friction of the sides; another vessel has, therefore, been introduced between the tube and air-pump, and this is first exhausted, and then a communication is opened between the tube and the exhausted vessel, when a double effect is produced, the excavating or exhausting process, as in the former instance, with the addition of a sudden blow on the head of the piles. A modification of this process has been adopted at the Rochester Bridge, where the cylinders were used as diving-bells; a plenum being established in them, so as to exclude the water. This is found to be preferable, as the cylinders will not descend in a stony bottom.

Another Claimant for the Steamboat.

At a recent session of the French Academy of Sciences, M. Arago announced that M. Kuhlmann, in Marburg, has discovered a hitherto unpublished correspondence between Denis Papin and Leibnitz, from which it appears that in the year 1707, Papin, who then lived at Hanan, and who, since 1695, had perceived the possibility of applying steam to the propulsion of vessels, was not contented with the idea only, but had made successful experiments with a little boat, upon the Fulda, which was afterwards altered according to the system ascribed to the English mechanic, Maudslay.—[Ex.

[It is well known that the steamboat failed to be successful until the steam engine was improved. Papin's experiments, if he made any, were failures, consequently they were of no benefit to the world. Papin, however, was a most ingenious Frenchman, and the world is indebted to him for a number of very useful discoveries.

Beet Sugar in Utah.

We learn that Messrs. J. W. Coward, W. Collinson and Russell, who have recently emigrated from England to Utah, have taken with them machinery for the manufacture of Beet-Root Sugar on the largest scale. They are wealthy men, and have invested $250,000 in this enterprise alone. Their machinery was made in England, and will turn out two hundred and sixty tons of sugar in a year. Fifty wagons were ordered at Kanesville, to carry the machinery to Salt Lake City. The beet-seed was sent out last year. There is no better country in the world for the production of beets, or other roots, than Utah. It will be a great advantage to the people to have an article so indispensable as sugar, supplied from a manufactory among themselves.

The Cow Tree.

In the forests of Brazil there is a remarkable tree, named "the cow tree," because it exudes a juice when tapped, which answers the purpose of milk to the inhabitants. During several months of the year, when no rain falls, and its branches are dried up, if the trunk be tapped, this sweet and nutritious milk exudes. The flow is most abundant at sun-rise, like that of our sugar maples. The natives receive the milk in large vessels; it soon grows yellow like cream, and thickens on the surface. Some drink it plentifully under the tree. It is used in coffee in place of cow's milk. The tree is very large, and is used in ship-building.

Foreign Patents.

The cost of a patent-right, in England, is about £100, or $500. This high fee operates as a restriction upon the number of inventions seeking protection in this way. The poor inventor of a machine of comparatively small value, cannot afford to pay for protection so large a proportion of profits, as yet prospective and uncertain. The number of patents issued annually is less than half the average issued by our own Patent Office for the last four years. The fee for a patent in our own country is $30 to an American citizens, $500 to a subject of the Queen of Great Britain, and $300 to all other persons being foreigners. The fee to British subjects is based upon the principle of retaliation. Its reduction was repeatedly urged upon the consideration of Congress by the late Commissioner of Patents, on the double ground of policy and justice, inasmuch as our citizens are charged no more in England than British subjects; and, moreover, the reduction of our fee would bring us a great number of valuable inventions which do not now come to us.—[Philadelphia Ledger.

[This is true in every respect. There are very many useful inventions used with closed doors in England, especially in the manufacture and finishing of textile fabrics. If our patent fees were reduced, these would soon be introduced here, and by our laws would have to be sold at reasonable rates. We hope to see this reform carried out next year.

Interesting Statistics of the New York Post. Office.

It appears from an official statement that during the quarter ending March 31st, there were received by sea at the New York Post Office, 645,179 letters, and 310,812 newspapers. Of the letters received, 183,342 were by the Chagres steamers; 82,946 by the Bremen steamers; 91,785 by the Collins line; 262,882 by the Cunarders; and 24,224 by private ships. During the same period there were sent 177,004 by the Chagrcs steamers; 127,044 by the Bremen; 109,743 by the Collins; 266,108 by the Cunard steamers, and 7,383 by private ships—total 587,282. Newspapers sent, 435,136. The whole number of sea letters received and sent, was 1,332,461. To this add the domestic correspondence of the quarter, 5,603,493, and 180,000 circulars, and it will give 7,115,954 letters and circulars that have passed through the office during the quarter, or a daily average of 80,000. The gross amount of domestic and foreign letters sent and received for the quarter ending June 30, 1851, being the last quarter under the old law, was 4,494,430, showing an increase in favor af the quarter ending March 31, 1852, of 1,119,063 letters, or about 25 per cent.

When we shall have an ocean cheap postage of ten or five cents, there will be an increase of letters of more than four hundred per cent.

Sub-Marine Wire.

Mr. Henry Evans, of New Bedford, has invented a sub-marine telegraph wire rope, which is considered by those who have examined it as possessing superior qualities. It is constructed of hemp yarns of any thickness required, the yarns being saturated in a composition that is durable and impervious to water. The rope is made by machinery designed for the purpose, only one operation being required to complete it. The four strands of which it is composed are made at the same time, and the rope laid up and finished on a heart. A copper, steel, or iron wire, of any required size is completely bedded in the centre of each strand, and one also in the heart of the rope, making five wires in all. The cavity of the rope is filled solid with yarns, and then a thick coating of the same is put over the outside, making the rope perfectly round. The whole is then covered with iron or copper rods. The principle combines strength, durability, and economy. The machinery is capable of making a rope of any length without splicing, and giving the advantage of five different wires.

Electric Clock.

The Boston Journal describes, as one of the curiosities of the age, an electric clock recently completed by Mr. N. Farmer on an entirely new principle, and pronounced by scientific men to be the most perfect and simple of any. All wheel-work in the time-keeping part is dispensed with, therefore all friction is overcome. The time-keeping part of the clock is simply a pendulum, an electro-magnet, and two armatures. The vibrations of the pendulum break and close the circuit of electricity, while the combined action of the electro-magnet and armatures keep it in motion.

It is a clock that runs without weights or springs, or anything of the kind. Its moving power is a galvanic battery, which requires a small quantity of sulphuric acid once or twice a year; or if the workmanship of the clock is delicate, a copper plate buried in the ground will keep it in motion. There is no friction to be overcome save the suspension points of the pendulum, and the two armatures. Hence it approaches nearest to perfection as a time-keeper of anything in existence. One hundred or a thousand clocks all over the city, all ticking at the same instant, and keeping the same time, may be carried by the pendulum.—[Ex.

[The above parrgraph we have seen in a number of papers. We have not seen the clock; but, as described above, its operation is exactly the same as that of Bain, which we saw in this city three years ago.

Improved Preparation of Butter.

M. Chamlambel observes (in the Comptes Rendus), if butter contained only the fatty parts of milk, it would undrgo only very slow alteration in contact with the air. But it retains a certain quantity of caseum, which exists in the cream; this caseum is converted into a ferment, and gives rise to butyric acid, to which the disagreeable taste of rancid butter is owing. The washings which the butter is made to undergo can only imperfectly free it from this cause of alteration; for the water does moisten the butter, and cannot dissolve the caseum, rendered insoluble, under the influence of the acids, which are developed in cream. A more complete purification may be arrived at, by saturating these acids the caseum would again become soluble, and consequently the butter would retain only very small quantities, which would be removed almost entirely by washing.

The following is the way in which I propose to operate:—When the cream has been placed in the churn, pour in, by small portions at a time, and agitating the while, a sufficient quantity of milk of lime to enirely destroy the acidity; churn the cream until the butter is separated, but it must not be expected that it will collect in lumps as it generally does; decant the buttermilk, and continue to churn until it is sufficiently collected; it is then removed from the churn, and arranged in heaps as usual. By following this method, I have always obtained better products, and capable of being preserved for a longer time than those obtained by the common processes. The buttermilk loses all its sharp taste, and has been consumed with pleasure by people and animals, and has lost its laxative properties.

We have also restored, by washing with lime-water, butter which could only be used for melting. Lime-water may be replaced by any other alkaline ley.—[The Chemist.

The Crystal Palace in New York.

We have not heard a single word about the Crystal Palace (that is to be) in New York, for two or three weeks. The Association opened with a prodigious card for subscriptions of stock at one of the great houses in our city, but surely the project is viewed with little favor by our stock-jobbers, or we should have heard more about it since the books were opened.

Increase of the Use of Opium.

A correspondent writes to the New York Evening Post as follows:—"One idea suggested itself in one of your articles is entitled to far greater weight than a person who had not given particular attention to the subject might suppose. I refer to the use of opium as a stimulant. The extent to which this is practiced by people esteemed temperate, even in this country, is, probably, one thousand times greater than is generally believed. This may at first seem a very extravagant statement, but a good deal of investigation of the subject has led me to this conclusion."

Improved Bricks.

Henry Bushnell, of New Haven, Conn., has taken measures to secure a patent for a valuable improvement in making bricks, so as to render them impervious to water, make them very durable and at the same time more ornamental. The body of the bricks is made of any of the clays for making earthen or stoneware, and after being moulded, they are perfectly dried and covered with a solution of proper coloring matter, laid on according to any desired pattern, and then put into a kiln and burned, when they come out with a beautiful glazed surface, These bricks must be very carefully and peculiarly managed in the drying before the glazing is put on, or the glazing will be imperfect and the bricks spoiled, Mr. Bushnell prepares his bricks so as to render success certain. These bricks must be excellent for buildings exposed to north-east storms, for cellars and for drains. We hope that the hollow bricks will soon come into use; they certainly are an improvement. Some improvement in the burning of bricks must yet be made, so as to render them cheaper than they now are. It would be well if more brick and less wood were used in our city buildings; if bricks were cheaper, this would surely be the case.

Prohibiting the Sale of Goods by Sample.

The New York Legislature enacted a law making it punishable by a fine of $300 for a non-resident to sell goods by sample in the State. Such a law has also been passed in Pennsylvania and Maryland. The Legislature of Massachusetts propose to retaliate on these states by passing a similar law, but Massachusetts surely cannot complain, for this law is founded upon her law of license for pedlars. Such laws are exceedingly mean and unworthy of the States which make them. It shows a narrow-minded policy not to be found in some of the despotic States of the Old World.

Gooseberry Bushes.

To make beautiful gooseberry bushes, take sprouts of last year's growth, and cut out all the eyes or buds, in the wood, leaving only two or three at the top; then push them about half the length of the cutting into mellow ground, where they will root and run up a single stock forming a beautiful symmetrical head. This prevents the gooseberry from mildewing, which often happens when the fruit lies on or near the ground, and is shaded by a superabundance of leaves and sprouts. The fruit is larger, and ripens better, and will last on the bushes, by growing in perfection, until late in the fall.

A Good Act.

The Common Council, of Baltimore, have appropriated $10,000 for the use of the Maryland Mechanics' Institute. Would the New York Common Council do such a thing? We trow not. Such institutions do not bring any thing to the refreshment tables of our Aldermen.

No man is a gentleman, who, without, provocation, would treat with incivility the humblest of his species. It is a vulgarity for which no accomplishments or dress can ever atone. Show me the man who desires to make every one happy around him, and whose greatest solicitude is never to give just cause of offence to any one, and I will show you a gentleman by nature and by practice—although he may never have worn a suit of broadcloth, nor ever have heard of a lexicon.

Preserving Hams.

As the warm weather is at hand, (we hope so, at least), it is prudent to prepare hams against flies, &c. After hams are properly smoked, they should be packed down in boxes and well covered with coarse rock salt, and then kept in a clean, cool, and dry place. The salt will answer for packing meat in the Fall.

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(For the Scientific American.)

Observations upon Planting, Cultivating, Digging, and Cellering Potatoes.

Much time and writing have been uselessly spent upon speculations as to the cause of the potato rot, while but little has been purposely said which will benefit the man engaged in raising potatoes for a crop. My attention, since 1845, has been directed to the search after the *rot*, and also to the best method of raising sound potatoes. In the former, my opinion must gain a certain credit, from the fact that, in the latter, I have been perfectly successful. If my readers will pursue the course of cultivation recommended in the following paper, they will certainly be benefitted to the extent of growing sound potatoes, let their notions of the cause of the rot be what they may.

The cause of the potato rot, in my humble opinion, is to be found in the mismanagement of the tubers ever since their cultivation as esculents. Probably the seed of no article of general cultivation has been so much abused, year in and year out, as that of the potato. Sir Walter Raleigh, in the reign of Elizabeth, has the credit of introducing the potato from South America into England. Macaulay, the historian, informs us that, in the reign of James II., one hundred and seventy-six years ago, "the potato had become the food of the common people in Ireland." It has certainly been planted and used as a general article of food, and almost a necessary of life by all civilized nations for a period of at least one hundred years. In those countries of Europe where the winters are not severe, the potatoes, after being dug up in the Fall, are buried in "graves," and suffered to remain there till late in the spring, and then bared, when they are usually found to be a solid mass of sprouts and potatoes. To separate the potatoes from the sprouts is generally the work of women and boys; and the writer, when a boy, well remembers "sprouting potatoes," in old England. The mass of organic matter thus annually taken from the constitution of the potato may be imagined, when the heaps of sprouts generally exceed the heaps of potatoes in bulk. And, reader, remember that these sproutings, these fillips at the constitution of the potato, have been perpetrated year by year for nearly two centuries. Does nature, in any of her teachings, instruct us to deteriorate seed by sproutings, or cut sets, or any other act which can and will wear out the original organism? Does she not directly teach us, by consequences as startingly legible as was the writing on the wall of Belshazzar's palace, that, if we intend to procure superior specimens of plants and animals, that we must not employ inferior agents? Does any common-sense farmer sow the tailings from the fanning mill, with the expectancy of reaping a rich harvest of plump clean grain? Does he preserve the imperfect nubbings, the patrimony of squealing pigs, for the express purpose of planting, in the earnest hope of husking a premium crop of corn? No! He sows from his best and cleanest grain, and plants from his soundest corn. But mark the contrast. When he plants a field with potatoes, why does he pick out the meanest and smallest for seed, and even cut them into sets and eyes? Because he is led away by example and not by judgment; because crops heretofore have been fair, he rashly thinks they must be fair for ever! Inhabitants of earth! but little inferior to the angels, where has been and where is now your cunning, skill, and knowledge? After transgressing the laws of nature, you are now receiving the immutable penalty, and in seeking after a remedy, instead of looking down at your feet, you are intently gazing at the clouds. Instead of studying, cause and effect, transgression and consequences, you are vainly expecting some one, fore-ordained of heaven, a second Jenner, to work out a cure upon the distempered constitution of the recklessly injured, wantonly misused potato. The disease has proceeded from yourselves, the remedy must proceed from yourselves also.

For the benefit of those who are anxious to live and learn, I will now detail my system of planting, cultivating, and preserving the potato. They can adopt my ideas and method, or not, as seems to them best, but one fact is certain, that if the seasons turn out ordinarily wet, it will be useless to plant potatoes in the expectancy of a sound crop, unless strict attention be paid to the preparation of the soil and time of planting, quality of seed and mode of cultivation, time of digging, and method of preserving during winter.

First, Preparation of Soil—The best soil, in my opinion, for the growth of sound potatoes, under all seasons, is a sandyl oam, resting upon a porous subsoil, with the surface flat and sloping just enough to carry away the water proceeding from a heavy fall of rain. But as every farm will not give us this peculiar soil and situation, we must make the best use of what we have, keeping in view one fact, however, that it is useless to plant potatoes in low wet ground, for they will surely rot. The best plan is for a farmer to set apart four acres of his highest, dryest, and strongest land, and plant one half of it the first year with corn, taking care to plow under a heavy coat of cow dung; the remaining half he can sow with any grain that will give a fair crop. If the soil have been run hard previously, let a top-dressing of twenty bushels of lime to the acre be applied. The year after let him plant with potatoes the half that was corn, and let the half that was grass be planted with corn, and manured if necessary. When plowed for potatoes, the lands ought not to be more than seven paces wide, and plowed eight inches deep, and after planting, the dead furrows ought to be plowed out beam deep. By thus taking an alternate crop of corn, potatoes, and grain, and manuring for the corn only, he will keep one half this patch of land in most suitable condition for raising sound potatoes. This system will require the land to be manured every five years, enough if a good heavy coat be plowed under.

Second, Time of Planting—The best time for planting, in my opinion, is the Fall of the year—say the last week of September in Central New York,—but as Fall planting, in this country is impracticable, on a general scale, unless other crops be neglected, the best time for planting is as soon as the land can be fitted in the spring. Late planting is a serious error, for it is much more natural for seed potatoes to be in the ground than sprouting in the cellar, or wilting on a barn floor. And it is a fact, that the potato tops, whether planted in April or June, generally show symptoms of disease in the last week of August, after which event the young tubers discontinue growing. Therefore those potatoes which are planted the earliest will have the longest time to grow, and consequently produce the largest tubers, and the heaviest crop. In times, before the appearance of the rot, the potatoes were generally planted in June, and the tops continued green and growing till nipped by the October frosts, thus allowing full four months for the growth of the plant; but, as things now stand, if we wish the same time of growth, we must plant as early as possible. The soundest and highest colored potatoes I have ever grown, were self-planted in the Fall, or what we term "volunteers," and this is a great fact in favor of Fall planting.

Third, Quality of Seed—Some of the choicest kinds of potatoes at the present time are more inclined to rot than some of the meanest and coarsest. Unless much attention be paid to cultivation, these choice kinds will soon become extinct, for a farmer who plants for a crop will soon only plant those kinds which will produce sound. I would advise the farmer to plant from those kinds which appear to stand the rot the best in his own immediate nighborhood, and not be captivated with the ideal reports of qualities of potatoes grown some 100 miles away. After determining to plant the soundest kinds of potatoes, let him select whole sets of a medium size,—a common hen's egg being a proper gauge. The smallest and the largest, although capable of producing well, are not, in my opinion, as desirable as even moderate sized seed. But under all and every circumstance, avoid planting cut sets, eyes, and peelings. The fact that sound crops have been and are now produced from cut sets, is no more an argument in their favor, than a previous sound constitution, or a week's hopeful recovery, is any sign of a permanent cure of a consumptive patent. In Central New York the "pale reds" and early "pink eye," are considered the least liable to rot, and the common "pink eye," "Philadelphias," and "Carter's" the most liable. For a general crop I would recommend the "pale reds," for early use the "early pink eye."

Fourth, Time and Method of Cultivation—After the ground has been plowed, and has become sufficiently dry, let it be dragged over once, only just enough to level the comb of the furrow slice. Then take a marker and set out the hills four feet apart, centre and centre. Plant two sets, 9 inches apart, in each hill, and place them in the same direction as the dead furrows. This will allow the cultivator to go lengthwise of the lands, and may cut within 3 inches of the sets. It is not wisdom to drop the sets on a heap in a little hole for the purpose of letting the cultivator go both ways. Plant the sets on the top of the ground, scatter on them one handful of air-slacked lime, and cover them up with two inches of soil. Many farmers will condemn this method, for, say they, if a dry season come, your potatoes will be very small. But it must be remembered that these dry seasons come very seldom, whereas ordinary wet seasons are what we have to guard against in attempting to grow sound potatoes. Early planting, to a certain extent, also disarms this objection. As soon as the rows of the young plants can be discerned by their leaves, let the cultivator be put through the rows, taking care to gauge the teeth so that they shall cut as near as possible to the sets without actually upturning them. The more care taken in marking out truly, the easier and more complete will the cultivator work. The advantages of the spring steel-toothed cultivator over the plow and hoe are known to every one who has used both. If the season be forward and growing let the cultivator be put through the rows again in about a week's time after the first cultivation. The object in cultivating is to keep the soil light, open, and lively so that rain water can percolate freely, and the sun have a proper effect in warming up the soil, so that when you hill up, the new plants shall be supplied with a covering of soil in the very best condition for supplying and nourishing all the elements of re-production.

As soon as you perceive that the tops are almost large enough to drop, put the cultivator through once more twice in a row, and let the teeth cut down as low as 6 inches, and then, with the hoe, let the hills be formed of a proper shape, not high and conical, but flat and shallow, and as large superficially as possible, taking care to have all the channels betwixt hills open, so that rain water can have a free passage to the dead furrows. After making "grips," or small drains, in low flat places, with which our country abounds, the farmer has done all that is possible for a healthy crop of potatoes. The result will now depend upon the season. In a very wet season he will have to dig a few rotten potatoes, in a moderately wet season his crop will be certain and the tubers large; in a dry season they will be small, but all sound.

Fifith, The Time of Digging and Method of Preserving During Winter—The best time for digging potatoes is just before the heavy Fall rains, say the last of September or beginning of October. I have preserved potatoes in "graves" during winter, by putting over them two alternate coats of straw and earth, and this is the only method that can be pursued if cellar room be wanting. Whether they be buried up in "graves," or put into the cellar, be sure to sprinkle a handful of air-slacked lime over each bushel-basket of potatoes. All the good done by the lime, in my estimation, is its effect upon the mould or fungus which adheres to the runners and the eyes of the tubers. Like the fumes of sulphur, it will destroy the fungi, but it will not alter the constitution of the potato; careful cultivation must do that.

In the spring, as soon as frost will permit, potatoes ought to be taken out of the cellar and spread over the barn floor in a layer not more than 9 inches thick; this will prevent any injurious sprouting before planting time, and although those potatoes which are intended for early summer use may wilt a little, still that is better than letting them remain in the cellar, a tangled mass of struggling vegetation. I may as well state that I never sell any wood ashes, but sow them on my potato ground and garden. Soil for growing potatoes cannot be too rich in potash, as may be inferred from Boussingault's analysis of the ash of the pota and the potato top:—

Ash of Potatoes.		Ash of Potato Tops.
Carbonic acid, . .	13·4	Carbonic acid, . 11·0
Sulphuric do. . .	7·1	2·2
Phosphoric do. .	11·3	10.8
Chlorine, ...	2·7	1·6
Lime, ...	1·8	2·3
Magnesia, ...	5·4	1·8
Potash, ...	51·5	44·5
Soda, . . .	(traces)	(traces)
Silica, ...	5·6	13·0
Oxide of iron, &c.	0·5	5·2
Charcoal and loss,	0·7	7·6
	100·0	100·0

Every good crop of potatoes abstracts from the soil of potash, per acre of tubers, about 58 lbs.; of potash, per acre of tops, about 135 lbs.! I would advise farmers to sow the ashes and not to drop them in or on the hill.

I have now done:—if these observations and deductions will induce a few good farmers to follow the course of cultivation laid down my labor will be rewarded. In this case example alone will work upon the masses, for they are, at present, too eagerly bent on finding out some quack remedy for a disease of which they know nothing.

John R. Chapman.

Oneida Lake, Madison Co., N. Y.

The Steamer Glencoe.

The cause of the explosion of the steamer Glencoe, which took place at St. Louis on the 23rd ult., has been ascertained to be the want of water in the boilers. This was owing to the culpable recklessness of the chief engineer, George Buchanan. This has been found out by the last statement of the assistant, engineer, Mr. Ryan. He stated that before reaching St. Louis, he tried the water in the boilers, and found it very low, and called to Buchanan and informed him of the fact, and received some evasive answer. He again tried the water, and again called to Buchanan, who told him to mind his business, that there was water enough in the boilers, and he would take her with it to St. Louis or to h—l. Not satisfied, Ryan expostulated, and Buchanan told him in substance that it was his (Buchanan's) watch, and that he (Ryan) had nothing to do with pumping up, and, moreover, that if he (Ryan) had his way, he would have the water from the boilers running out at the tops of the chimneys. Subsequently Buchanan remarked that the boat was making good time, and he would take her into St. Louis kiting. This was perhaps the last remark made, and when the boat reached the wharf, and commenced trying to effect a landing, Buchanan turned on a gauge-cock and let on the water. The instant the cold water came in contact with the heated boilers, now nearly dry, the explosion took place.

How to get Sleep.

How to get sleep is to some persons a matter of high importance. Nervous persons who are troubled with wakefulness and excitability, usually have a strong tendency of blood on the brain with cold extremities. The pressure of the blood on the brain keeps it in a stimulated or wakeful state, and the pulsations in the head are often painful. Let such rise and chafe the body and extremities with a brush or towel, or rub smartly with the hands to promote circulation and withdraw the excessive amount of blood from the brain, and they will fall asleep in a few moments. A cold bath, or a sponge bath and rubbing, or a good run, or a rapid walk in the open air, or going up and down stairs a few times, just before retiring, will aid in equalizing circulation and promoting sleep. These rules are simple and easy of application in castle or cabin, and may minister to the comfort of thousands who would freely expend money for an anodyne to promote "Nature's sweet restorer, balmy sleep."

The Dual Phenomenon.

A correspondent writes to the Philadelphia Ledger that there have been three cases of the dual phenomenon like the Siamese Twins. He mentions the three cases. If he should read George Buchanan's History, he would find out another and the most remarkable one in history.

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NEW INVENTIONS.

Improvements in Locomotives.

Henry R. Remsen, and P. M. Hutton, of Troy, N. Y., have taken measures to secure a patent for improvements in Locomotives. The steam is admitted to the cylinders on one side of the pistons only, so that the cylinders are single-acting—the piston rod only acts upon the crank and driving-wheel during one half of the revolution, and that while the crank pin is above the axis. To insure a constant application of power, three cylinders are employed, with their pistons acting upon cranks placed at an angle of 120°, to each other. Each cylinder, however, is so constructed, that the pistons can be operated in both directions, for reversing the motion. One immovable eccentric for each cylinder is made to work the engine both ways, and thus the complicated mechanism of the ordinary reversing gear is dispensed with. Each cylinder is furnished with two valve boxes and two valves, one valve opening and closing the steam and exhaust passages leading to and from one end of the cylinder, and the other, those leading to and from the other end of the cylinder. Both valves are attached to the same rod, and both are always moved when the engine is working, but the steam is only admitted to one valve box at a time. Two steam pipes and two exhaust pipes are thus rendered necessary to each cylinder, one steam and one exhaust communicating with either end. Two main steam pipes only are required, each branching to the separate cylinders, and each provided with a valve for opening and closing its communication with the boiler. By simply opening one valve, and closing the other, the engine may be worked in either direction, according to which valve is opened and closed.

Improved Grain Separator.

J. Hindman, of Philipsburg, Ohio, has taken measures to secure a patent for an improved grain separator. It might be supposed that improvements on grain separators were at an end, but still they come. This improvement consists in having a vertical trunk divided by a partition which extends all across from the bottom nearly to the top, so that a current of air may be drawn through it up one side and passing over it and then down the other side, the said current being produced by a fan beneath one side, which forms a partial vacuum in the trunk. In the descending side of the trunk over the fan, there is a small passage through which a small stream of air is admitted upwards from the outside of the trunk; this passage is furnished with a valve to control the width of the opening. The grain is admitted near the bottom of the ascending side of the trunk, and the chute down which it passes enters a little way into the trunk and rises, so as to give the grain a tendency to rise when it first enters before it falls to the bottom. The chess and light wheat, together with the chaff and dust, are carried up the ascending side of the trunk and over the partition into the descending side and they have a tendency, from the direction of their flight, to pass out at the small air passage spoken of, but that tendency of the chaff, &c., is overcome by the small stream of air which does not affect the *light wheat* and *chess*, but keeps the chaff and light dust on the opposite side of the passage, and causes it to take the direction of the larger current and pass down through the fan and out of a windspout. The improvement is for separating in a *superior* manner.

Improvement in Boxes for Mill Dams and Breakwaters.

James P. Duffey, of Philadelphia, has taken measures to secure a patent for an improved mode of bracing and securing together metallic boxes to be used in the construction of piers, breakwaters, mill dams, levels, &c. &c. The metallic boxes are braced together by a series of diagonal braces meeting at a point about the centre of the box and connecting the braces by rods, having flanges upon each end, and so attached to the braces that they form a continuous rod, passing through the centre of the boxes and the plate where the braces meet, thus strengthening the braces and forming strong and durable boxes to be used for the purposes mentioned.

PATENT CIRCLE PLATE FOR DOORS.

The annexed engravings represent the improvements in Circle Plates invented by Nathan Mathews, of Pittsburg, Pa., and which was patented on the 6th ult. (April, 1852).

Fig. 1 shows the inner face of a circle plate. Fig. 2 is a section taken in the line, * * fig. 1. Fig. 3 shows the outside of the dovetail plate by which the circle plate is held. The same letters refer to like parts. The improvement is applicable, more particularly to circle plates of glass, stone-ware, and like materials which are in danger of being broken by ordinary means of attachment; it is, however, also applicable to metal circle plates. The improvement consists in forming the circle plate with a recess on its inner face, having tapering dovetail sides, which fit to two small dovetails on the door or lock, or on a plate secured to the door or lock; the circle plate is merely placed up against the door or lock and dropped in the dovetails, and when the spindle or knob is put in its place, it holds the circle plate secure.

Figure 1.

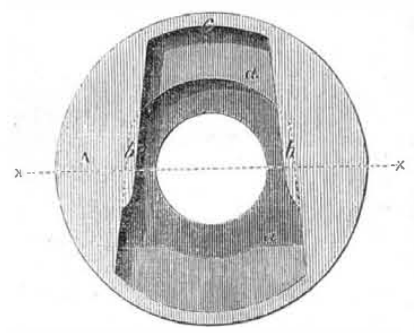
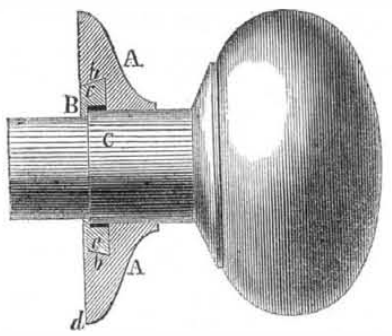
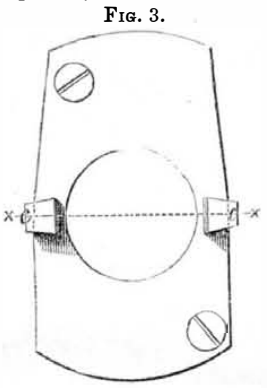


Figure 2.



The circle plate, A, may be of any form. The recess, *a*, on its inner face extends nearly from top to bottom, and is rather deeper near the centre, to allow depth to the dovetails; it tapers from the bottom to the top. *b b* are the dovetails in the sides. The dovetails, *c c*, to which the dovetails, *b b*, fit, are shown attached to plate B, which is to be secured on the door. The plate, B, is of such a size that it will lie within the shallower part of the recess, *a* and allow it to close up to the door, the face of which is represented by the line, *d*, in fig. 2. The taper of the sides of the recess and of the dovetails allow the circle plate to be put up against the door just above its place, and dropped into its seat, the dovetails fitting each other tightly when the holes in the plates are opposite each other. The upper shoulder, *e*, of the recess rests upon the top edge of the plate, B. When the shank, C, is put in its place, it holds the circle plate secure to the door, as it prevents its movement upwards, downwards, and sideways; the dovetails prevent its being drawn from the door, and keeps it from being moved. The circle plate not only obviates the danger of breaking when made of brittle material, but it is exceedingly easy of attachment; it only requires to be dropped in its place, and can be taken off the instant the knob or spindle is taken out. This improvement is equally applicable to handles and spindles of bell-pulls, &c. It is a good improvement, and should arrest the attention of those engaged in the manufacture and use of these articles.

Fig. 3.



More information about rights, &c., may be obtained by letter addressed to the assignees, Edwards, Morris & Co., at Pittsburg.

BARKER'S DOUBLE-ACTING FORCING AND LIFTING PUMP.

Figure 1.

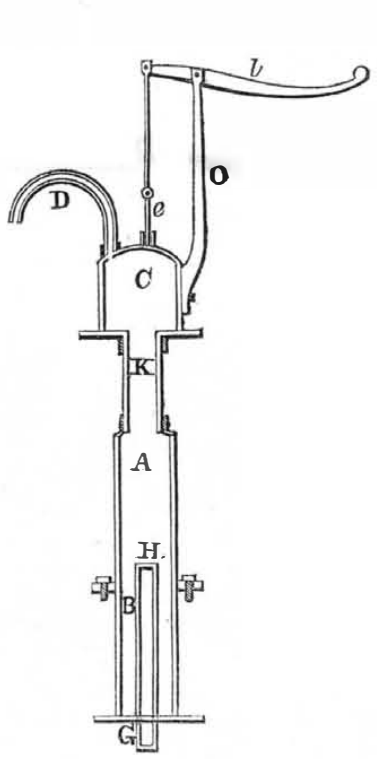
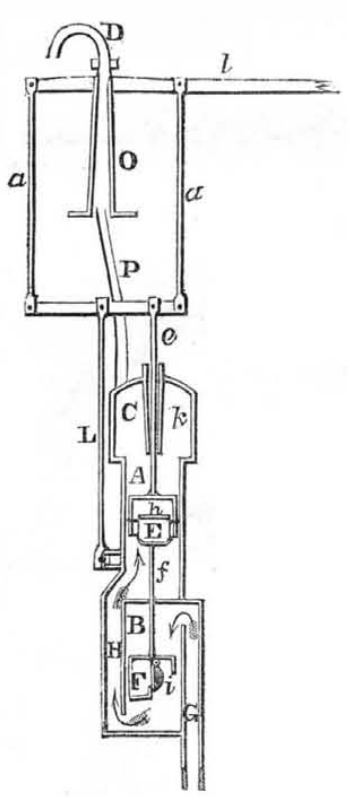


Figure 2.



This improved pump was patented by the inventor, A. Barker, on the 17th of last February. Fig. 1 is a view of the pump, adapted to wells that are not so deep as to require the pump to be put far down; and fig. 2 is a vertical section, showing the inside. The same letters refer to like parts.

A and B are the two sections of the barrel separated by a diaphragm or division plate through which the lower part of the piston rod, *f*, passes tightly. In the upper section, A, the piston, E, moves, worked by the handle, *l*, and the rod, *e*; the piston, F, moves in the lower section, B, and is connected with E by the rod, *f*, and is worked by the same power as the said piston. G is a pipe which conducts the water from the well into the upper part of the section, B. A pipe, H, conducts the water from the lower part of the section, B, into the lower part of A, in the direction shown by the arrows. One half of the lower piston, F, descends lower than the other, so as to include the space (in which F is placed) which may allow an aperture to open horizontally or upward, through the partition separating the said space from the part of the section, B, below the other half of the piston. A valve, *i*, closes this aperture, and opens so as to allow the water to pass downward through the piston, while it will close by its own weight; the object of this arrangement is to render the action of the valve prompt and sure, by causing its own weight to assist in its closing. A valve, *h*, opening upward is placed in the piston, E. C is an air chamber. A pipe, *k*, surrounds the piston valve, and reaches from the top to near the bottom of said air chamber, in order that no air may escape by the packing around the piston rod. Fig. 2 represents the fixtures for placing the pump in deep wells. L is a vibrating fulcrum, with a short lever at the top connecting with the piston rod, *e*. O is the standard in which the brake, *l*, works at the top of the well; *a a* are rods connecting the brake with the short lever below. P is a pipe conducting the water from the pump below up through the standard, O, from which it is discharged through the spout, D. In figure 1, K is a conductor, connecting the pump with the air chamber, C, which may be lengthened as circumstances require—the object of this is to allow the working part of the pump to reach below frost, so that by making a small leak, in the winter, the water will fall below frost, and thus secure it against freezing, without any care on the part of the operator, or injuring the operation of the pump—this leak may be stopped in summer. This pump works in the following manner:—the pistons, E and F, being in the upper part of their respective barrels, are forced down, which causes the water to flow up from the well into the upper part of the barrel, B; the piston, F, in descending, forces the water below it, up through the pipe, H, into the upper barrel, A, opens the valve, *h*, in the descending piston, E, and passes into the air chamber, C, to be forced out through the spout, D. On raising the pistons, the upper one, E, having its halve, *h*, closed, lifts the water contained in the barrel, A, into the air chamber, G, at the same time, causing the water to flow up from the barrel, B, to fill the vacuum produced in the barrel, A; the water by the same motion opens the valve, *i*, of the piston, F, and flows through the piston to fill the lower part of the barrel, B. Thus a continual flow of water is produced, whether the pistons move up or down, without the assistance of any other valves or contrivance.

We have here a pump superior in several particulars:—its action is such that the water is continually rushing forward in the same direction without re-action in the cylinder, whether the piston rod moves up or down, by which a great amount of power is saved, and more water passed through a cylinder of the same capacity than by those in which the water is drawn first into the cylinder, and then suddenly re-acted and forced out. It is extremely simple, there are but two valves in the pump, both of which are connected with the pistons, which, together with the valves, may be easily removed for repairs, thus we have a double-acting forcing and lifting pump with no more valves or liability to get out of order than the old single acting pump. Another great advantage of this pump is, that the pistons are always under water, so that no air can pass them, it does not depend on a stuffing box to form a vacuum either way, and is, therefore, a good double-acting lifting, as well as forcing pump.

All experience has shown the great difficulty of keeping either stuffing boxes or pistons, which are constantly wearing, so tight as to prevent the admission of air, and it is well known that a leak which will not let out water enough to injure the action of the pump will let in air enough to destroy it; this pump is free from all the difficulties attending double-acting forcing pumps, which depend for their operation on stuffing boxes or on pistons, on plungers exposed to the air, to form a vacuum.

More information about rights, &c., may be obtained by letter addressed to A. Barker or J. M. Brookfield, Hondesdale, Pa.

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Scientific American

NEW-YORK, MAY 1, 1852.

Some Reasons why Patents should not be Extended.

The present Patent Laws provide for the granting of patents for fourteen years, and, if a patentee has not been sufficiently remunerated during that time, they also provide for the extension of the patent for seven years longer, making the whole term twenty-one years. Our first Patent Laws made no provision for the extension of patents; they—the patents—became public property at the end of the fourteen years. A patent at the present day is a hundred times more valuable than it was in 1790. When our Patent Laws were first enacted there were only about three millions of inhabitants in the United States, now there are twenty-four millions; if the patent term had originally been twenty-eight years it would have been of less benefit to an inventor than a term of seven years now. The means of spreading information about a useful invention now, and the great number of inhabitants in our country likely to use it, compel us to say that the man who fails to get remunerated for a useful improvement in fourteen years, must manage it badly for his own sake, and that of the public also. Within the past two years, in many places of our country, the people have been so treated by agents of some patentees, that a very general discontent is beginning to be expressed against our system of patent laws. The public, from revelations which have come out from the Patent Office itself, has come to the conclusion that it is not, and has not conducted its affairs at all times according to the rules of open and upright dealing, and it is even asserted by many that our country would be better without the Patent Laws and Patent Office than with them.

If the Patent Laws were abolished, no man would be deprived of any *natural* right; every man could invent, construct, and use any machine without let or hindrance from any person, consequently, if there were no Patent Laws, no inventor would have less *natural rights* than he now has. But Patent Laws are laws of good policy; our country, and all countries which have Patent Laws have prospered under them; they certainly have encouraged improvements in science and art. A patent is the cheapest and best mode of rewarding an inventor for a useful discovery. It gives him the exclusive right to make, use, and sell his invention for fourteen years, after which it becomes public property. A patent is a bargain between the people and inventor; the one says, we will allow no person but yourself and those to whom you grant the privilege, to make, use, or sell your invention for fourteen years; we will protect you against competition during that period, and you may make as much money as you can, but after that its exclusive character must cease. It has been said by some—and men of law too, that inventions should be held like any other property—meaning houses, farms, fruits and merchandise—for ever, by inventors and their heirs; but such men have not studied the subject with assiduous attention. Inventors have a perpetual right to their inventions, and so have their heirs for ever, without any Patent Law at all. The property of a patent is not in its nature like the property of land, fruits, or merchandise; it is property in the abstract, and based on *priority* more than on originality. If patent property were based on the title, *original invention*—the product of an inventor's mind—then every inventor would have a right to use his own invention, even if it were like a previous invention. Our laws forbid this, and grant patents to the first improvers only, hence we find that we have five or six hundred rejections every year in the Patent Office, the applicants having made oath that they were the first inventors, and did so in the honest belief that they were. Patent property is therefore not like other property; it is not based on *original* labor, but is based on a question of *time*—priority of discovery. If a man gets a patent for a machine, that patent gives him the right of property in every machine—even if there were ten thousand of them built like it in the country; and this title he has by law, although those who built them knew nothing about his patent, and although they made them with their own hands, or paid for them with their own money. It is not so with any other kind of property. We have stated this question so clearly, we think, that every one must understand it. Some inventors may think we should have advocated the other side of the question, but it is best for both of us to view the question in the light of truth, not as a sophism.

A patent is an instrument of national polity, and a good one, both for inventors and our country; as the Philadelphia Ledger has truly expressed it, "the Turks and other Mahomedans have no Patent Laws, where is there inventive power?" Patent rights have been abused, and they may be so again, still nothing that we know of at present, can be substituted for our patent laws; to abolish them would be a most unfortunate thing for our country.

Patents which have been extended by Congress, have been used by the agents and assignees of said patents more than all others, to irritate and annoy many worthy and honest men in our country. If in many cases patentees have sold cheap, it is no argument in favor of an extension of a patent; it is unfortunate for a patentee when he does so.

It is the business of statesmen, and also the business of editors, to forsee, in some degree, what may be the state of feeling in the country upon any question, and to use practical sagacity in providing for events, so as to bring forward good measures, and avoid evil ones. Judging from expressions which have come to us from many quarters, and looking strictly at the question of our Patent Laws, as they stand in principle and practice, we believe that it would be better for our inventors and people, if no patent were to be extended beyond the period of fourteen years after 1853. If there were no extension of patents there would be less general sympathy for patent pirates; patent rights would then be more valuable, because they would be more strictly enforced, and more respected by the community.

We believe that a repeal of our patent laws would greatly retard the progress of improvements in the arts; inventors, for their own sakes, would, as far as possible, keep and use their improvements in secret, and would guard them with all that jealously which so distinguished the inventors of old, and which kept back the advance of machinery to an extent which we can scarcely credit. But, at the same time, our people have jealous feelings towards those who have exclusive privileges, although those privileges may have been granted for some good done; it is therefore dangerous to pursue any policy which has irritated or which may irritate the minds of our people by exactions beyond the point of endurance; in such a case the repeal of our Patent Laws would certainly be brought about.

Our inventors will see that we are sincere in advocating a policy, which we believe, by timely concession and reform, will make patents to be more respected and consequently less subject to infringement.

Chinese Antiquities in Ireland.

A paper was recently read before the Belfast Literary Society in Ireland, on Chinese porcelain seals, which have been found in that country. About fifty have been found, some in deep bogs, one in a cave, some in one place, some in another, scattered over the country from Belfast to Cork. How they came there is a query; nobody can tell. They are of great antiquity. They have all inscriptions on them in the ancient Chinese seal language, and Mr. Gutzlaff had translated a number of them. Each seal is a perfect cube, with the figure of a Chinese monkey by way of a handle. It is supposed they may have been brought there by ancient Phœnicians, but it is our opinion that they were brought there by some of the ancient Irish tribes, who no doubt journeyed through and came down from China. No such seals have ever been found in Britain. This may account for the differences in the Scots and Irish Celts. Smith asserts in his treatise on the Human Races, that the Irish are a different mixture from the Northern Celts; but some more light on the subject may clear the mystery up.

International Copyright.

Some of our papers are discussing the propriety of an international copyright for authors. The New York Tribune and Philadelphia Ledger take the position that an international copyright law would be just, proper, and beneficial. The New York Daily Times takes the opposite view of the question, but manages the question with little skill and less learning than we should have expected.

Article 1, Sec. 8, of the Constitution of the United States, says:—

"Congress shall have power, &c., to promote the progress of science and useful arts by securing for limited times to *authors* and inventors the exclusive right to their *respective writings* and discoveries." The framers of our constitution looked forward to the benefits that would be conferred upon our country by granting to both natives and foreigners, patents and copyrights for their productions, and left the power with Congress to make laws how the principles they declared in the constitution should be carried out. Congress has carried out those principles in respect to foreign inventors, but not in respect to foreign authors, consequently one principle of the constitution is yet in abeyance to such ideas as the following in the New York Times:—

"Suppose the English publisher refuses to sell the copyright of Macaulay's History, or any other book, to an American house. It cannot be re-printed here; and we have, therefore, only to pay the price demanded for the English edition,—including government taxes upon the necessaries of life needed by the workmen, the income taxes, &c., or go without it. The price of the book must of necessity be greater than it is when re-printed here, because its cost is greater. And no matter how large the number sold, the price can never fall below the cost. If English publishers can copyright their books in this country, we must inevitably, in purchasing them, pay our share of the taxes levied on their production by the English Government. The price fixed upon them will be determined upon that basis."

This is very unenlightened reasoning.—The same arguments might be employed against international patents which are now granted in all civilized countries. The international copyright law might contain a clause providing for the author to bring his work into use in the United States within a certain period, or forfeit the copyright. The English patent law has a provision of this kind, and our patent laws have a like provision also. Act 1836, Sec. 15 provides, that if an alien fails for the space of eighteen months from the date of his patent to put and continue on sale his invention to the *public on reasonable terms* he loses the benefit of his patent. We do not discuss the question of international copyright, whether it is politic to adopt it or not, we only wish to show that an international copyright law is not viewed in a proper light, by some able and intelligent men.

Paying for Parker's Water's Wheel.

We have received a letter from Mr. Goodnow, the same gentleman whose letter we published on page 211, about Parker's Water Wheel, and to which we received an answer from Messrs. Havens and Barron, the agents of Parker, in Vermont, who denied the statements contained in Mr. Goodnow's letter. In the letter now received, there is another enclosed, from S. Frost, of Derby, Vt., a respectable gentleman, who states that *he* had only four days notice given him by the agents of Parker, to settle and pay fifty dollars for the use of the spiral wheel for eight years, or else be sued before the United States Circuit Court; and property was attached to the amount of $5,000 where they could find that amount. The letter also states, "they take out of this county $2000." This gentleman had paid a Mr. Wilson's agent $10 for a patent fee before, and then $50 to Parker's agents, making, as he says, "a pretty costly patent."

From this letter, which is now before us, we judge that Frost bought his wheel, paid for it, and paid a patent fee of $10 to another person (Wilson's agent), and he did not know that he was using a wheel claimed to be an infringement of Parker's Patent. He was honest in all that he did, and has been made to pay dearly for his honest ignorance. By such doings, it is no wonder that we hear such a cry of universal indignation, from almost every quarter, against the claims of some patentees.

The Woodworth Patent in the Senate.

A great number of petitions are presented in the Senate, every week, against the extension of the Woodworth Patent. A Senator said, one day, "I wish the Senate would act on the Woodworth Patent and the French Spoliation Bill, and settle some business." It appears to us that it is a duty incumbent upon the Senate to do this speedily. It has pained us a great deal to hear of so much crimination and recrimination in the present Congress—so much personal matter—so much said and done which should not have been said and done there; and so little said and done which should have been said and done there. Priding ourselves, as we do, in having a respectable Senate and House of Representatives, we, out doors, can see more clearly, perhaps, than those within, what has a respectable and what has a degrading tendency in the actions of the Senate and House of Representatives. In our opinion, it would tell better to the credit of Senators and Representatives, politically, with the people, if they would devote more attention to practical measures than to partizan speech-making. We hope the Senate will soon act upon the Woodworth Patent, and let the people, who are interested in the matter, have their minds set at rest one way or the other.

Law Questions on Patents, Parker's Wheel, &c.

I see it stated that Parker's agents have attached property and person of those whom they claim to have been infringing their patent. I question the legality of that proceeding, and the U. S. Court agent which granted the attachment, I believe, has exceeded his power in this peculiar case. No injunction can (in the true sense of our patent laws), now be granted against any wheel claimed to be an infringement of Parker's patent. The patent has expired—it has no existence as a legal instrument of to-day; how then can an injunction be granted to restrain a person from using a wheel which is claimed to infringe a patent which has no existence. The suits for infringement of Parker's patent that was, can only have a retrospective effect for damages, for the time the wheel was used by a defendant or defendants, during the time the patent was in existence. Suits for infringement of Parker's patent cannot now be entertained in equity. This is my opinion respecting the meaning of the Patent Laws.

JUNIUS REDIVIVUS.

Another Fire Annihilator Experiment.

While they were trying some experiments with the Fire Annihilator at Newark, a few days ago, the flames got the start of the machines, and, no water being handy, the whole building was consumed. Four or five Annihilators were thrown in at the windows, but it was no go—flame was too much for gas. The person who had charge of the experiments was Dr. Colton, who, in a letter, stated he had been successful twice, but the flames got so hot before he applied the last annihilator, he could not get into them. That is it exactly; the annihilator, even in the hands of a doctor, was annihilated. Newark was a first-rate place to try the experiments; nitre paper, and nitre and charcoal, are just about the same thing for putting out fires. Give us the fire-gun in preference to either.

Discussion About our Patent Laws

Some of our daily papers have entered into a controversy about our Patent Laws. The Philadelphia Ledger ably sustains them, the New York Daily Times is opposed to them There is a want, (and there are reasons for it) of correct information displayed on both sides, especially by the "Times," as we will show in the next number of the Scientific American.

Patent Case.

On the 12th April, before Judge Kane, in Philadelphia, Ross Winans obtained a verdict and damages of $5,400 against the New York and Maryland Railroad Company for the infringement of his patent.

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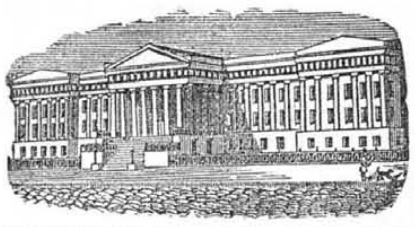

Reported Officially for the Scientific American

LIST OF PATENT CLAIMS

Issued from the United States Patent Office

FOR THE WEEK ENDING APRIL 20, 1852

SUBMARINE AUGERS—By Norman Blake, of Ira, N. Y.: I claim forming a pod auger with a hinge joint, in combination with connecting wires, substantially in the manner and for the purpose set forth.

MATTRESSES—By T. G. Clinton, of Cincinnati, O.: I claim the use of the hair of hides of cattle, treated after the manner of or steeped with the hides of cattle in the lime vats of a tan yard. or other suitable place, as described, with or without other animal or vegetable matter, treated or not treated conjointly therewith, or separately, in the same way; and the use of other animal or vegetable matter, under like treatment and circumstances, as described, whether used conglomerately, conjointly, or separately, or their equivalents, when such animal or vegetable matter is of the kinds used for upholstering or sleeping purposes, in the articles of mattresses, ottomans, cushions, sleeping sofas, sacking bottoms, or analogous articles, whereby a new result is attained, viz., an article obnoxious to bed bugs, without the necessity of any temporary application of poisonous mixtures thereto, thus furnishing the world with a harmless antidote to a great nuisance, and abolishing the necessity for a great peril to human life in the domestic circle.

WINNOWERS—By T. J. Doyle, of Winchester Va.: I claim, first, in combination with the side openings, discharge outlets, or passages, the invention, use, and application of the sliding diaphragm, with double sloping bottom. This diaphragm bottom, as shown and used, has a double slope, or is a double inclined plane, outward, inclining from each side of its elevated longitudinal centre.

Secondly, I claim the use, application, and arrangement of an adjustable or sliding cheat or smut board in combination with a screen. with side apertures or outlets, for the purpose specified.

SASH STOPPER AND FASTENER—By C. C. Felton, of Dedham, Mass.: I do not claim the combination of a rocking or vibrating friction plate, a lever spring and notched plate, as they are arranged in the drawings of the patent granted to B. S. Hadaway; but as I dispense entirely with a lever separate from the rocking friction plate, and make the said plate to operate itself.

I claim my improvement of combining the rocking plate and lever in one single piece, and extending it below the part which rocks on the part of the notch of the catch plate, all essentially in manner as described, whereby I greatly simplify the construction of the window catch, and thereby render it not only cheaper in construction, but less liable to get out of order.

PROTECTING WHEELS AND AXLES OF CARS BY INCASING THEM—By A L. Finch, of New Britain, Ct.: I claim incasing the axles and wheels of rail cars within a metallic casing, substantially as specified.

KEYS OF PIANOFORTES. ORGANS, etc.—By Wm. F. Furgang, of Albany, N. Y.: I claim the finger keys of organs, pianofortes, or any other musical instrument played in a similar manner, by constructing a part of every key, in such manner that when in position on the key board, such part of every key shall be both level and in range with the similar parts of the other keys, so that the running of a finger over the keys of the whole chromatic scale on the key-board, may be capable of producing similar effects to those that can now be produced by a similar running of a finger over the lower range of keys of pianofortes as now constructed, substantially in the manner and form as set forth.

CAPPING SCREWS—By Chas. T. Grilley, of New Haven, Ct: I do not claim the adaptation, simply, of a cap of sheet metal to the particular configuration of any regular or irregular form, by compression, or in whatever other manner the same may be produced: but I claim the attachment of a brass, copper, or other suitable metallic cap to, and its combination with an iron wood screw, substantially in the manner and by the process described (which I conceive to be the only practicable method in which the same can be usefully effected), whereby and by means of the successive operations of punching or stamping, the nick is first cut through the shell, and then after being adjusted to the groove or slot in the head of the screw, the sides thereof are driven down into, and made to press closely against the sides of the slot, leaving the bottom of the groove or slot uncovered, so that the cap, when closed round the head of the screw, will preserve its hold, without liability to be turned or displaced by the screw driver which works upon the iron surface at the bottom of the slot, and against the covered sides thereof, thereby furnishing to the public, at a comparatively small cost, a wood screw having all the beauty and finish of a brass, copper, or plated screw, in combination with the greatly superior strength of an iron one. The invention is equally applicable to steel screws, which may be capped in a similar way.

MACHINE FOR DRAWING SPIKES—By Daniel Hale, of Hinsdale, N. Y.: I claim the shackle, with the arrangement for clasping the head of a spike, for the purpose of drawing it from the cross-tie of a railroad track. in combination with a clevy and lever, substantially as set forth.

APPARATUS FOR RAISING WATER—By N. H. Leby, of Charleston, S. C.: I claim constructing the wheel, or turbine, with exterior ribs, of any suitable number, size, or shape, the said ribs operating in combination with a cover, or its equivalent, in the manner and for the purpose set forth.

REFRIGERATORS—By Andrew Marsh, of Cincinnati, Ohio: I am aware that ice safes have been made with hollow shelves for water; but these are practically objectionable on account of their costliness, cumbersomeness, difficulty of cleaning, and liability to bursting, either from the congelation of the water, in the event of the discharge becoming choked, or from the hydrostatic pressure. I claim the application, as described, to an ice safe or refrigerator, of a crimped, convoluted, or corrugated form to the shelves, in order (in addition to combining strength with lightness of construction) to capacitate them for the collection, retention, and discharge of the water which results both from the ice and the atmospheric moisture within the case.

BRICK MACHINES—By Jesse Samuels, of Allentown, Pa.: I claim the manner of feeding the clay to the moulds, by means of the cut-off in the hopper case, with the scraper for heaping the clay under the plunger, in connection with the plunger, operated as described, for partially condensing the clay into the moulds, preparatory to pressing, substantially as described.

I also claim the "carrier" for clamping and removing the brick from the moulds, consisting of the clamp and back plate for clamping the brick, and the spring and tumbler shaft and trigger or their equivalents, arranged substantially as described and operated upon by three stationary pins, as set forth.

ROTARY PUMPS—By H. C. Spalding & Gage Stickney, of Hartford, Ct.: We claim the spiral flanch working within a circular case, said flanch being constructed as described, in combination with the sliding valve, the spiral flanch and valve operating in the manner and for the purpose substantially as specified.

BALANCE GATES—By William C. VanHoesen, of Leeds, N. Y.: I claim the method of opening and closing the gate, substantially as described, viz., by means of the ropes or cords passing over the semi or half pulley, and attached to the small upright, said pulley being attached to one of the side pieces of the gate, the gate being hung upon pivots and balanced by the weight or counterpoise, the several parts being operated as set forth.

TAILORS' MEASURES—By Wm. T. Wells, of Shelbyville, Tenn: I claim the graduated straps in connection with the several centres about which they respectively turn, and with the graduated arcs—the said centres being arranged substantially as set forth and for the purposes specified, using for that purpose the aforesaid instrument, or any other substantially the same, and which will produce the intended effect; but I disclaim having invented the tape measure, or the elastic square designated as No. 3 underneath the main instrument.

HAME TUGS—By R. B. Whipple, of Cleveland, O.: I claim the formation of the hame tug, by means of the two metallic plates, fitted together so as to embrace the buckle, loop, and cleft, substantially in the manner set forth.

REFLECTING SPIRIT LEVEL AND SQUARE—By F. Wilbar, of Roxbury, Mass.: I deem the cubical block, with its two mirrors and two spirit levels, arranged as shown, and it is this instrument or combination of block or frame, two mirrors, and two spirit levels, or, what is equivalent to the two levels, a spherical surface level, I claim as my invention.

DEVICES FOR CASTING CIRCLE PLATES, ROSES, ETC., WITH DOVETAILED GROOVES—By Nathan Matthews (assignor to R. Edwards, D. A. Morris & Nathan Matthews), of Pittsburgh, Pa.: I claim forming the dovetails in circle plates, by dovetail pieces, which are withdrawn lengthwise from the recesses, the said withdrawing being performed by attaching the dovetail pieces to levers within the cylinder or body of the mould, the said levers being moved by a rod passing through the side of the cylinder, or body of the mould, substantially as set forth.

RAILROAD CAR BRAKES—By Benj. Kraft, of Reading, Pa.: I do not claim the mere application of friction rollers, as such are not new, nor yet do I claim, independent of the means and manner shewn, the employment of a stop, to prevent the advance rubber from being raised by the wheel, or exclusively of itself, the adoption of a spring to reduce the shock.

I claim the combination and arrangement of the sliding bar, E, made as described, with the rollers and suspended frame attached to a hanger by a centre pin, on which is adjusted the spiral spring, said frame being made, arranged, and operated in the manner and for the purpose set forth.

DESIGN.

COOKING STOVES—By A. J. Gallagher & J. J. Baker, of Philadelphia, Pa. Ante-dated January 17, 1852.

[Five of the patents in the above list of claims were obtained through the Agency of the Scientific American. The claim of Mr. Lebby, of Charleston, S. C., for Water Raising Apparatus, is for the Wheel, which has been so successfully applied in the Rice Fields of South Carolina.—ED.]

Bill for Reforming the Patent Laws.

The Bill of Senator Norris, which we noticed two weeks ago, has had two readings, and according to present appearances it will become a law with all its objectionable features. We would again call the attention of the Senate to the 8th and 12th sections; the Bill, if it becomes a law with these sections in it, will, we are positive, lead to the most unfortunate results. The 8th section is, perhaps, one of the greatest oversights introduced into a bill.

We have now before us a most able article, published in the Philadelphia Argus, of the 21st inst., from the pen of Wm. W. Hubbell, attorney, and one who has a profound knowledge of patent principles and laws, and he takes the same view of the question that we do, and he shows conclusively that section 8, if carried out, will contravene our commercial laws, and may, in many cases, do great injustice to every class of our citizens. His views of the said section shows us, also, the benefit of a multitude of counsellors, for he takes one view of the question which we overlooked. He asserts that the section is unconstitutional. It is, and we particularly direct the attention of Senator Norris to this point. A ection of the Constitution says: "Congress shall have power to secure to inventors for limited times the exclusive right to their *discoveries*," now, as the new section in the Bill grants to inventors the exclusive right in that which they have *not* discovered, it must be unconstitutional. It would therefore be wise and prudent to strike out this section, rather than it should become a law to be declared unconstitutional if carried to the United States Supreme Court, to the humiliation of our Senate.

Unless there had been a great deal of lobbying at Washington, such a clause would never have been introduced; we appeal to Senators themselves, it this be not true. It is a great pity that outside legislation, should have led to the introduction of this principle in any Bill relating to a reform of our Patent Laws

Petition for Extension of a Patent.

On the petition of Ezra L'Hommedieu, of Chester, Conn., praying for the extension of a patent granted to him, for an improvement in machinery for manufacturing double twist screw augers, for seven years from the expiration of said patent, which takes place on the twenty-fourth day of July, eighteen hundred and fifty-two, (24th July, 1852.)

It is ordered that the said petition be heard at the Patent Office on Monday the 5th of July, 1852 at 12 o'clock M.; and all persons are notified to appear and show cause, if any they have, why said petition ought not to be granted.

Persons opposing the extensions are required to file in the Patent Office their objections, specifically set forth in writing, at least twenty days before the day of hearing; all testimony filed by either party to be used at the said hearing, must be taken and transmitted in accordance with the rules of the office, which will be furnished on application.

THOS. EWBANK, Com. of Patents.

Washington, April 19th, 1852.

Recent Foreign Inventions.

DELINEATING OBJECTS.—James Palmer, of Paddington, Eng., has patented the following method of delineating objects:—

The purpose of this invention is to furnish the means of producing drawings of all descriptions of objects in a much simpler and more perfect manner than is effected by the camera lucida, camera obscura, graphic telescope, and other instruments hitherto proposed for that purpose.

A plate of glass is mounted in a frame or easel, which is furnished with suitable adjustments, for supporting the glass in a vertical position at any convenient height. On one side of the plate of glass, and at a distance of several inches from it, is fixed the frame of a pair of spectacles, which is also capable of adjustment in position. One of the apertures of the spectacle frame is closed by a plate or shutter. The operator applies his face to the spectacle frame, and looks with one eye through the glass at the object which he wishes to delineate, and he then traces over the outline of the objects on the glass, with a pencil formed of a mixture of wax, soap, shellac, and lamp-black, which is capable of marking very distinctly on the smooth surface of the glass. In this way, an exact drawing of the object, in true perspective, is obtained with great facility. The spectacle frame preserves the position of the eye without interfering with freedom of vision. The instrument is very convenient, and its use is readily acquired, which can scarcely be affirmed of any of the instruments hitherto proposed for the purpose, as is shown by the very slight use which is made of such instruments.

The drawing on the glass is transferred to paper by tracing it, or by pressing a moistened sheet of paper upon it.

The same apparatus is used in a similar manner for drawing with an etching needle on a sheet of gelatine supported by the glass, or on a sheet of glass coated with gelatine. The drawings thus made may be printed from the gelatine as from a copper plate. To enable the gelatine to be used for printing on moistened paper without adhering to it, it is rendered insoluble by immersing it in a solution of alum, borax, and acetate of lead. Gelatine thus prepared does not adhere to the paper, and may be immersed in cold or warm water without injury. The prints from the gelatine may be transferred to the stone or zinc, and printed in the ordinary manner of lithographic printing. The invention is applicable to making drawings and engravings of buildings, machinery, landscapes, flowers, or any other stationary objects. For taking portraits, a rest is provided to keep the head of the person in a stationary position.

These drawings or delineations are necessarily smaller than the real objects, and their size may be varied by varying the relative distances of the glass, and the object from the eye of the spectator. When it is required to increase the size of the drawings, a drawing on glass or gelatine is placed in an instrument somewhat similar to a magic lantern, by which a magnified image is thrown on a disc of glass ground on both sides. A sheet of gelatine is fixed on the back of the glass disc, and the magnified image traced upon it with the etching needle, or with the pencils above mentioned.—[London Mechanics' Magazine.

PRESERVING ANIMAL SUBSTANCES AND CURING CERTAIN DISEASES.—Armand Lecomte De Fontainemoreau, of France, has recently taken out a patent in England for the employment of metallic salts, but principally of sulphate of zinc in aqueous solution, for the preservation of corpses, and anatomical parts, and animal substances generally, and to the cure of wounds and external diseases.

For the preparation of the sulphate of zinc, any salt of that metal may be employed; but the patentee prefers to employ metallic zinc in a granulated state. This he dissolves in such a proportion of dilute sulphuric acid as to produce a solution of a strength of about 30° to 40° Baume. After allowing the solution to stand for a time sufficient to cause the deposition of the foreign matters held in suspension, he decants the clear, and employs it in the preservation of corpses by injecting through an artery. If the subject is to be exposed to the air, or kept in a naked state, the patentee recommends that a third part by weight of spirits of turpentine should be mixed with the solution; he employs also other essences when odors of any particular kind are required, and colors the fluid red.

When animal substances are to be preserved by immersion, the solution is made in the same way as above mentioned, only that it is employed at a strength of 20° to 25° Baume. If the solution is to be employed for purifying rooms from the taint of decomposing organic matters, it is used of a strength of about 10° Baume.

For the cure of wounds, the solution is prepared in a highly concentrated state, and reduced to 3° to 4° Baume, by the mixture therewith of decoctions of linseed, marsh-mallow, and other emolient herbs. In this state it is used by saturating lint, and applying it to the wound. The solution may also be reduced to 2° or 3° Baume, and used as a wash for the hands.

Hindoo Letters.

In external appearance and construction of expressions, a Hindoo letter is worthy of notice. It is written on a palm leaf, with an iron stile, four to six inches long, sharp pointed at the end. In writing, neither chair nor table is needed, the leaf being supported on the middle finger of the left hand, and kept steady with the thumb and forefinger. The right hand does not, as with us, move along the surface, but after finishing a few words, the writer fixes the point of the iron in the last letter and pushes the leaf from right to left so that he may finish his line. This becomes so easy by long practice, that one often sees a Hindoo writing as he walks the street. As this species of penmanship is but a kind o faint engraving, the strokes of which are indistinct, they make the character legible by besmearing the leaf with an ink-like fluid. A letter is generally finished on a single leaf, which is then enveloped in a second, whereon is written the address. In communicating the decease of a relative, the custom is to singe the point of the leaf upon which the afflicting news is written. When a superior writes to an inferior, he puts his own name before that of a person to whom he writes, and the reverse when he writes to a superior.

Another Dreadful Explosion.

On the 9th inst., the steamboat Saluda exploded her boilers at Lexington, Mo., and it is supposed that about 100 persons were killed; they were Mormon passengers bound for Salt Lake. The Mormons were from England and Wales. The negligence of the engineer, it is said, was the cause of the disaster. When shall we have an end of these murderous scenes, and yet our Congress sits deliberating in debate, old about who shall have the spoils next year.

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TO CORRESPONDENTS.

C. L. A., of D. C.—Yours will appear next week.

F. M., of N. H.—We answer in the negative your inquiries about self-acting machines.

R. E., of Miss.—We have carefully examined the sketch of your improved lathe, and regret to inform you that it is not patentable. Lathes for cutting gearing, constructed substantially on the same plan, are manufactured by Messrs. Corliss, Nightingale & Co., Providence, R. I.

T. M., of Texas—Weare much obliged to you for Ogles' Reaper. We shall give the matter a careful analysis.

J. H. B., of Ohio—We do not think a patent on the churn could be obtained; we have seen them constructed upon essentially the same plan. The improved mill stone is new, so far as we know.

J. R., of N. Y.—A screw placed on each side of the keel is quite old.

R. H., of Mass.—The gutta percha interior tube would answer well, but it would so add to expenses that it would not be adopted; this is our opinion. The coating of pipes with gutta percha is not new.

J. W. H., of New York—We think your arrangement new and patentable. We have never seen anything essentially like it. You had better send a model of it to this office.

N. S., of Miss.—Shear-steel is so called because prepared particularly for making clothiers' shears, and scythes; it is made by laying several bars of common steel together, and heating them in a furnace until they acquire the welding temperature. The bars are then beaten together with forge hammers, after which they are drawn anew into bars.

D. A., of Ct.—Mr. Whitechurch is supposed to be the original inventor of the hydraulic ram, and it was afterwards improved by Montgolfier.

M. F., of Ga.—By placing a red-hot iron ball in a cylinder containing a vacuum, the heat would be communicated to the cylinder. Light does not require air to conduct it from the sun; it is not possible to form a perfect vacuum in an air pump. We do not know what *heat* is—we know its effects, that is all.

H. T. F., of N. C.—The Daniel's Planing Machines are manufactured by Ball & Rice, at Worcester, Mass; S. C. Hills is agent for this city, and will furnish you with one of any dimension you may require.

J. N., of Va.—You are right; and your very idea for preventing people turning off and letting on the gas, is attached to the gas burner just before our desk. It is not, we believe, generally applied.

R. A. G., of N. Y.—Your views of the causes of the strike are not stated clearly; we think you attribute the cause to piece work; if so, the men are entirely to blame.

W. C. McA., of N. Y.—We are much obliged to you for the documents, they are of great service to us, and we shall make a good use of them.

A. C., of Tenn.—We have received yours in answer to S., and will soon give it attention.

S. L., of Me.—Parker's claims can be exacted for the use of the wheel at any time since 1828, to Jan., 1852—not otherwise. The question of the claims of the different water wheel patentees is a complicated business; refuse to pay them all, and stand an action for damages—that is our advice.

B. B., of Ohio—We do not think there is any such work in existence. A monthly publication would be required to treat with the progress made in that branch.

G. B. B., of Me.—When it is apparent that a party remits a dollar, ostensibly for the Scientific American, but really for the purpose of availing himself of our time and services, in giving him ten times that amount worth of information gratis, he is liable to be disappointed.

P. C., of Mo.—The Patent Laws were duly sent.

D. S., of Ala.—$22 received; will ship a mortising machine in a few days, and insure as you direct.

S. L. P., of Wis.—Your lathe was sent by the Troy Line on the 23rd.

H. & S., of Harrisburg—A mortising machine was forwarded to you, by Adams & Co.'s Express, on the 23rd ult.

W. C., of N. Y.—It is a fact that fowls do oil their feathers; the oil they obtain from a receptacle secreted under the feathers near the tail.

M. W. St. J., of N. Y.—We are not aware that any manufactory of those scales exists in the city.

P. F., of Vt—Your mode of fastening scythes to the snath is believed to be new and patentable.

W. K., of O.—Your excuse for not having continued the Sci. Am., is indeed a good one. The numbers shall be preserved for you as you direct.

Money received on account of Patent Office business or the week ending April 24:

J. H. G., of O., $30; F. N. C., of Ill., $20; M. B., of N. Y., $30; B. T. N., of Mass., $32; R. & H., of N. Y., $45; D. S., of N. Y., $35. T. G. B., of N. Y., $45; J. B. C. & Co., of Mass, $37; E. M. & Co., of Pa., $62; J. D., of Pa., $30; W. S. W., of N. Y., $52; J. O., of N Y., $20; D. B., of Pa., $30; A. B., of O., $20; J. H. S. & Co., of Pa., $500; C. H. P., of N. Y., $50.

Specifications and drawings belonging to parties with the following initials have been forwarded to the Patent Office during the week ending April 24:

S & H, of N. Y.; F. N. C., of Ill.; J. P. D., of Pa.; H. B, of Ct.; T. G. B., of N. Y.; J. T., of Mass.; R. & H., of N. Y.; C. H. P., of N. Y.

City Subscribers.

Those of our subscribers who receive their papers from Carriers, and change their location on the 1st of May, will please leave their new address at the office.

Literary Papers.

We have entered into an arrangement with the publishers of the "American Model Courier," of Philadelphia, and the "American Union," of Boston, which will enable us to furnish either of the two, with the Scientific American, for $3 per annum. They are literary journals of the first order, and are widely circulated in all sections of the country.

☞ Parties cannot be allowed an addition of one of the Literary papers, as above, by remitting a single dollar after paying their year's subscription to the Scientific American; neither can they be permitted to avail themselves of the above conditions for a less term than a full year, and on the precise terms advertised. Money received under other circumstances will be credited in continuance of the Scientific American.

An Important Paragraph.

Whenever our friends order numbers they have missed—we always send them if we have them on hand. We make this statement to save time and trouble, to which we are subjected in replying when the numbers called for cannot be supplied.

The Post Office Laws do not allow publishers to enclose receipts; when the paper comes regular subscribers may consider their money as received.

Subscribers ordering books or pamphlets are particularly requested to remit sufficient to pay postage.

Inventors and their Models.

There are several small cases remaining at the various Express offices in this city, marked to our address, on which the expenses have not been prepaid. We would respectfully inform inventors that the Express charges on ten or a dozen cases daily, from every part of the Union, amounts to no inconsiderable expense, and that we shall, in future refuse to receive packages unless the Express fees have been paid, or the expense otherwise provided for. Parties who reside at a remote distance from the city, and cannot arrange for pre-paying the Express charges, should enclose a sufficient amount in a letter and send by mail.

Patent Claims.

Persons desiring the claims of any invention which has been patented within fourteen years, can obtain a copy by addressing a letter to this office;—stating the name of the patentee, and enclosing one dollar as fee for copying

Persons writing us without signing their names to the communication, are considered as not acting in good faith, or as mistaking the rules which govern all newspaper establishments, and are therefore not attended to.

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In reply to many interrogatories as to what back numbers and volumes of the Scientific American can be furnished, we make the following statement:

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We publish, and have for sale, the Patent Laws of the United States. The pamphlet contains not only the laws but all information touching the rules and regulation of the Patent Office. Price 12 1-2 cts. per copy.

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IMPORTANT TO INVENTORS.—The undersigned having for several years been extensively engaged in procuring Letters Patent for new mechanical and chemical inventions, offer their services to inventors upon the most reasonable terms. All business entrusted to their charge is strictly confidential. Private consultations are held with inventors at their office from 9 A. M., until 4 P. M. Inventors, however, need not incur the expense of attending in person, as the preliminaries can all be arranged by letter. Models can be sent with safety by express or any other convenient medium. They should not be over 1 foot square in size, if possible.

Having Agents located in the chief cities of Europe, our facilities for obtaining Foreign Patents are unequalled. This branch of our business receives the especial attention of one of the members of the firm, who is prepared to advise with inventors and manufacturers at all times, relating to Foreign Patents.

MUNN & CO., Scientific American Office,
128 Fulton street, New York.

DAGUERREOTYPE CAMERAS—A new article, of very superior quality, warranted fully equal to any ever produced in this or any other country; Daguerreotypists visiting this city will find it to their advantage to call at the establishment, 102 William st. L. CHAPMAN, importer and dealer in all kinds of Daguerreotype goods. 33 2*

IRON FOUNDERS MATERIALS—viz.: good American Pig Iron—grey, mottled and white; No. 1 Scotch Pig Iron, of favorite brands. Pulverized Sea Coal, Anthracite Charcoal, Soapstone, and Black Lead Facings. English and Scotch patent Fire Bricks—plain, arch, and circular, for cupolas. Fire Sand and Fire Clay. Iron and brass moulding sand; Core sand and flour; always on hand and for sale by G. O. ROBERTSON, 155 Water street (corner of Pine), N. Y. 33 6*

STEAM ENGINE FOR SALE.—One of Hoe's upright square Engines for sale, of about five horse-power, price $150: can be seen running daily. Apply at 47 Dey street, N. Y., in the rear, to C. H. ANDRUS. 33 2*

LATHES FOR BROOM HANDLES, Etc.—We continue to sell Alcott's Concentric Lathe, which is adapted to turning Windsor Chair Legs, Pillars, Rods and Rounds; Hoe Handles, Fork Handles and Broom Handles.

This Lathe is capable of turning under two inches diameter, with only the trouble of changing the dies and pattern to the size required. It will turn smooth over swells or depressions of 3-4 to the inch and work as smoothly as on a straight line—and does excellent work. Sold without frames for the low price of $25—boxed and shipped with directions for setting up. Address (post paid) MUNN & CO.
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MORTISING MACHINE.—Dear Sirs: I received the Portable Mortising Machine about 3 weeks ago; I have used it, and am very well pleased with it. It is the best plan of a machine of the kind I have ever seen. W. R. McFARLAND.
Nashville, Tenn., 1851.
This machine is simple, durable, and effective, and is boxed and shipped for the low sum of $20.
MUNN & CO.

JOHN W. GRIFFITHS—Ship Builder and Marine Architect, 658 Fourth st., N. Y., furnishes models and draughts of all description of vessels, with the computation of stability, capacity, displacement, and necessary amount of impulsion. Propelling power located and proportionably adapted to the form of the vessel. whether sailing or steaming. Mr. G. also superintends the construction of vessels, and may be consulted upon all subjects pertaining to the various departments of the science or practice of ship building. Draughts forwarded by letter to all parts of the world, and to any desired scale; all letters must be post-paid. 27 13*

LEONARD'S MACHINERY DEPOT, 109 Pearl-st. and 60 Beaver, N. Y.—Leather Banding Manufactory, N. Y.—Machinists's Tools, a large assortment from the "Lowell Machine Shop," and other celebrated makers. Also a general supply of mechanics' and manufacturers' articles, and a superior quality of oak-tanned Leather Belting.
27tf P. A. LEONARD.

A. B. ELY, Counsellor at Law, 46 Washington st., Boston, will give particular attention to Patent Cases. Refers to Munn & Co., Scientific American. 13tf

CLOCKS FOR CHURCHES, PUBLIC BUILDINGS, RAILROAD STATIONS, &c., and REGULATORS FOR JEWELLERS.—The undersigned having succeeded in counteracting entirely the influence of the changes of the temperature upon the pendulum, and introduced other important improvements in the construction of clocks, are prepared to furnish an article, superior to any made in the United States, (the highest grade warranted to vary less than two minutes in twelve months). Glass dials for illumination furnished. Address SHERRY & BYRAM, Oakland Works, Sag Harbor, Long Island, N. Y.

"At the Oakland Works of Sherry & Byram there are made some of the finest clocks in the world."—[Scientific American.

"Mr. Byram is a rare mechanical genius." [Jour. of Commerce. 26tf.

TO LUMBERMEN—E. H. & S. E. PARSONS, inventors of the Self-straining and Self-ranging Saw Frames, for saw-mills, combining the advantages of both the muley and gate mills and superior to either, reducing the wear and tear to about one-fourth. The saw will bear as much feed, and is as easily kept in order, and is warranted to saw the same amount of lumber with one-fourth less power. They may be seen in successful operation at the Empire Works, Binghampton, Broome Co., N. Y., where they are manufactured, and at Frankfort, Ky., and Cass, Tenn, For further particular address (post-paid) Wilkesbarre, Pa. 29 5*

A CARD—The undersigned beg leave to draw the attention of architects, engineers, machinists, opticians, watchmakers, jewellers, and manufacturers of all kinds of instruments, to our new and extensive assortment of fine English (Stubbs) and Swiss Files and Tools; also our imported and own manufactured Mathematical Drawing Instruments of Swiss and English styles—which we offer at very reasonable prices. Orders for any kind of instruments will be promptly executed by SIBENMANN & QUARTIER, Importers of Watchmakers' and Jewellers' Files and Tools and manufacturers of Mathematical Instruents, 15 John st. 23 13*

TRACY & FALES, RAILROAD CAR MANUFACTORY—Grove Works, Hartford, Conn. Passenger, freight, and all other descriptions of railroad cars and locomotive tenders made to order promptly. 26tf

POST'S PATENT SLIDING DOOR FRONTS—for stores and Public Buildings; a new, cheap, and simple fixture for securing store fronts, which renders them fire and burglar proof, has been invented and patented by the subscriber, who is now prepared to sell rights. Messrs. Quarterman and Son, 114 John st, N. Y., are general agents. Address, (post-paid) Wm. POST, Architect, Flushing, L. I. 25tf

NEW HAVEN MANUFACTURING COMpany, Tool Builders, New Haven, Conn., (successors to Scranton & Parshley) have now on hand $25,000 worth of Machinist's Tools, consisting of power planers, to plane from 5 to 12 feet; slide lathes from 6 to 18 feet long; 3 size hand lathes, with or without shears; counter shafts, to fit all sizes and kinds of universal chuck gear cutting engines; drill presses, index plates, bolt cutters, and 3 size slide rests. The Co are also manufacturing steam engines. All of the above tools are of the best quality, and are for sale at 25 per cent. less than any other tools in the market. Cuts and list of prices can be had by addressing as above, post-paid. Warehouse No. 12 Platt st., New York, S. C. HILLS, Agent N. H Man'g Co. 25tf

PAINTS, &c. &c.—American Atomic Drier, Graining Colors, Anti-friction Paste, Gold Size, Zinc Drier, and Stove Polish.
QUARTERMAN & SON, 114 John st.,
23tf Painters and Chemists.

BEARDSLEE'S PATENT PLANING MAchine, for Planing, Tonguing and Grooving Boards and Plank.—This recently patented machine is now in successful operation at the Machine shop and Foundry of Messrs. F. & T. Townsend, Albany N. Y.; where it can be seen. It produces work superior to any mode of planing before known. The number of plank or boards fed into it is the only limit to the amount it will plane. For rights to this machine apply to the patentee at the abovenamed foundry—or at his residence No. 764 Broadway; Albany. GEO. W. BEARDSLEE. 23tf

MACHINERY.—S. C. HILLS, No. 12 Platt-st. N. Y. dealer in Steam Engines, Boilers, Iron Planers, Lathes, Universal Chucks, Drills; Kase's, Von Schmidt's and other Pumps; Johnson's Shingle Machines; Woodworth's, Daniel's and Law's Planing machines; Dick's Presses, Punches and Shears; Morticing and Tennoning machines; Belting; machinery oil, Beal's patent Cob and Corn mills; Burr mill and Grindstones; Lead and Iron Pipe &c. Letters to be noticed must be post-paid. 26 tf

WOOD'S IMPROVED SHINGLE MACHINE—Patented January 8th 1850, is without doubt the most valuable improvement ever made in this branch of labor-saving machinery. It has been thoroughly tested upon all kinds of timber and so great was the favor with which this machine was held at the last Fair of the American Institute that an unbought premium was awarded to it in preference to any other on exhibition. Persons wishing for rights can address (post-paid) JAMES D. JOHNSON, Bridgeport, Ct.; or WM. WOOD, Westport; Ct., All letters will be promptly attended to. 22tf

THE EXCELSIOR Sand and Emery Papers. are offered as new and superior articles, being manufactured by an improved process; the paper is made from the best Manilla hemp, and consequently is very strong and lasting; the grit is of the sharpest and most enduring kind, and is firmly attached to the paper with a remarkable evenness of surface; their freeness from ridges, stripes, and other imperfections, recommend them to the notice of consumers These papers have been used by many of our first mechanics, and are pronounced superior to all others. Every sheet is stamped WM. B. PARSONS, and warranted. Samples furnished at the office, No. 284 Pearl street, New York. WM. B. PARSONS,
14 6m*

P. W. GATES'S PATENT DIES FOR CUTTING SCREWS—Patented May 8th, 1847.—This Die cuts Screws of any size, V or square thread, by once passing over the Iron. Also, Lead Screws for Lathes, Hoisting Screws, &c. All orders for Dies and Taps, with or without machines, will meet with prompt attention by addressing P. W. Gates, or Gates & McKnight, Chicago; Marshall, Bement & Colby, Philadelphia; Woodburn, Light & Co., Worcester, Mass. References—All the principal machine shops in New York, Philadelphia, and Boston. 13 6m*

CHARLES F. MANN, FULTON IRON WORKS, Below the Troy and Greenbush Railroad Depot, Troy, N. Y.—The subscriber builds Steam Engines and Boilers of various patterns and sizes, from three horse power upward; also, his Portable Steam Engine and Boiler combined, occupying little space, economical in fuel, safe, and easily managed; Double Action Lift and Force Pumps; Fixtures and Apparatus for Steam or Water; Tools for Machine Shops; Shafting and Pulleys for Factories. Brass Castings and Machinery made to order at short notice. Steam engines furnished cheaper than can be had elsewhere, of the same quality. 30tf

N. G. NORCROSS'S ROTARY PLANING MACHINE UNEQUALLED—This machine took the first medals awarded to Rotary Planers at the Fair in Boston and at the American Institute, in the Fall of 1850. The Circuit Court. in the Eastern Circuit, held at Boston on the 24th Feb., before his honor Judge Sprague, decided, after a long and tedious litigation of two years, that the Norcross Machine does not infringe the Woodworth Patent; this was on a motion for a permanent injunction, which was refused without ordering a jury trial. Rights to use this patent are for sale by N. G. NORCROSS, Lowell, Mass. 29 8*

IMPORTANT TO IRON FOUNDRIES—The Galvanic Alloy Manufacturing Co., Nos. 401, 403, and 405 Cherry st., N. Y., will furnish the Aerostatic Fan Blower at $55, and with patent fitting at $65, that produce sufficient blast for the longest cupola, melting 3 and 4 tons of iron per hour; taking less than one half the power of those now in use, that cost from $80 to $100. The wings, being only about an inch in width (planned upon entirely new and mathematical principles), produce double the blast with half the power of other blowers. Warranted in all cases, or they may be returned and the money refunded. 29tf.

MANUFACTURE OF PATENT WIRE Ropes and Cables—for inclined planes, suspension bridges, standing rigging, mines, cranes, derick, tillers &c.; by JOHN A. ROEBLING; Civil Engineer—Trenton N. J. 47 1y*

BALLOONS—From 1 to 1000 lbs. ascending power, made to order and warranted perfect. Also for sale, Wise's History and Practice of Aeronautics. No library is complete without this work: "It is the best book ever published on this subject,"—Scientific Am. Octavo, over 300 pages; 13 plates; price $2, delivered postage free to any part of the U. S. All letters (post-paid) addressed Lancaster, Pa., promptly attended to. JOHN WISE, Aeronaut. 32 5*

LOGAN VAIL & CO., No. 9 Gold street, New York, agents for George Vail & Co., Speedwell Iron Works, have constantly on hand Saw Mill and Grist Mill Irons, Press Screws, Bogardus' Horse-Powers, and will take orders of Machinery of any kind, of iron and brass; Portable Saw-mills and Steam Engines, Saw Gummers of approved and cheap kind, &c. Gearing, Shafting, large and small, cast or of wrought iron. 11 1y

HAWKIN'S Stave Dressing Machine—Is now in operation in the city of Milwaukie, Wis., and will dress from 6 to 8000 staves per day, ready for the truss hoops, and at one operation. Rights for States and Counties, and also machines, for sale, apply to WM. HAWKINS, Patentee, Milwaukie, Wis.
15 20*

1852 TO 1856.—WOODWORTH'S PAtent Planing, Tongueing, Grooving, Rabeting, and Moulding Machines.—Ninety-nine hundredths of all the planed lumber used in our large cities and towns continues to be dressed with Woodworth's Patent Machines. Price from $150 to $760. For rights in the unoccupied towns and counties of New York and Northern Pennsylvania, apply to JOHN GIBSON, Planing Mills, Albany, N. Y. 26tf

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SCIENTIFIC MUSEUM.

(For the Scientific American.)

Agricultural Science.

LIME AND ITS USES.—Lime is one of the most abundant substances in nature. As a carbonate of calcium, (limestone), it is a compound of calcium, carbon, and oxygen. Carbonic acid gas is a mixture of carbon and oxygen. When limestone is burned, the carbon and two parts of oxygen escape, forming what we call quick lime, (the oxide of calcium, Ca.O.) This quick lime, by exposure to the atmosphere, absorbs water, slacks, and falls into an apparent dry powder; it is then hydrate of lime, and is in the form in which it is generally used for agricultural purposes.

But this is not a good plan for slacking lime, for it has the property of absorbing carbonic acid from the atmosphere and coming back in a measure to its former limestone state. The best way to slack lime is to pour water on a heap of the burned limestone, about enough to slack it, and cover up the whole heap—two or three tons—with sand or earth from the field. The lime should be taken from this heap, as it is wanted to be spread upon the field. It acts upon many substances—animal and vegetable, and decomposes them, forming salts, which by the falling rains are so diluted as to make them fit to be taken up by the plants as food.

In Great Britain, from 100 to 400 bushels are applied at once, at intervals of ten, fifteen, or nineteen years—the term which leases run. In this country, the most common practice is to apply 30 or 40 bushels once in three years, which is the preferable mode. We have seen it applied with effect, however, at the rate of 800 bushels to the acre. This was upon a very stiff cold clay. Three hundred bushels would be about ten tons to the acre.

Indications of want of lime in the soil may be seen in heavy crops of straw, and light crops of grain; and in root crops where they seem to run fingers and toes. Experiments should be made by every farmer with lime, upon various crops in all his fields, to ascertain whether lime would be beneficial to him. Very few places will be found where it will not be so.

To apply lime to the soil, spread it evenly upon a crop of clover about to be plowed under, or sow it upon the surface with the wheat, and harrow thoroughly. It should never be combined with manure.

Every clay soil, every muck soil, and every soil in which vegetable fibre does not readily decay, because that is a sign that it contains some anticeptic acid, which prevents decay. This is the case in swamps. Sandy, gravelly or thin soils may be overlimed and injured; because, in causing the decay of vegetables, it sets free the ammonia, the very substance of fertility required. To prevent this, more food must be given for the lime to act upon. No farmer, who knows what the action of lime is, upon soils, will ever do without it, as an accessory to his manure. It is a component part of all crops grown by the farmer. When applied to land which have not borne wheat for many years, it has at once raised it to fertility for that crop. Where it has failed once to remunerate the farmer using it, it has proved of the greatest benefit a hundred times.

Lime mixed with swamp muck or peat, makes an excellent manure.

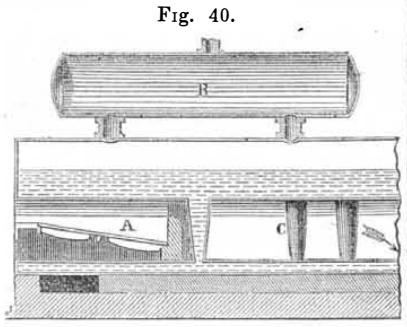
ENRICHING GARDENS AND LAWNS.—The daily and weekly waste of chamber slops, if sprinkled over the ground of small gardens would be all the enriching material required to produce good crops from year to year. Grass lawns if sprinkled with wash water and urine weekly would never require to be covered, as many now do, with a thick coat of manure, unsightly to the eye, and disagreeable to the foot when a pleasant day arrives when one wishes to look over one's shrubs and trees. Lawns so sprinkled would also be always fresh and green. Fruit has also been greatly benefitted by moderated doses during their growing season.

It is best to apply the suds and urine mixed with water. Gardeners, therefore, apply these substances during summer showers. Soap suds are excellent for grape vines, but they should never be applied while warm. The suds, well diluted with water, have just to be poured around the roots of the vines on the surface of the ground.

MANURE FOR STRAWBERRIES.—While on this subject we may as well give those of our readers who wish to cultivate a bed, only, of strawberries, the following mode of manuring them, as practiced by a cultivator in Philadelphia, and communicated to the "Friend's Review," published in that city by Friend Tatem. The writer had a very productive bed 30 by 40 feet. I applied says he, about once per week, for three times, commencing when the green leaves first began to start, and making the last application just before the plants were in full bloom, the following preparation:—Nitrate of potash (salt petre), glauber salts, and sal soda (carbonate of soda), each one pound—nitrate of ammonia, one quarter of a pound—dissolving them in 30 gallons of river or rain water. One-third of this was applied at a time; and when the weather was dry I applied clear soft water between the times of using the preparation, as the growth of the young leaves is so rapid that, unless supplied with water, the sun will scorch them. I used a common watering pot, making the application towards evening. Managed in this way, and the weeds kept out, there is never any necessity of digging over the bed, or setting it out new. Beds of ten years are not only as good, but better than those two or three years old.—[Maine Farmer.

On Boilers.---No. 21.

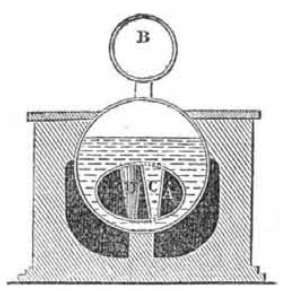
Fig. 40.



GALLOWAY'S DOUBLE FURNACE TUBULAR BOILER—The figures 40, 41, and 42, are a longitudinal, a transverse, and a horizontal section of a boiler, patented some years ago by Messrs. Galloway, of Manchester, England. It is a strong boiler, and well adapted for marine engines. The fire flue is supported and strengthened by a series of short vertical water tubes, C, which are made slightly conical, —about two inches wider at top than bottom, and among which the flame is allowed to play in its passage through the flue, the tubes being arranged in a zig-zag position, as seen in fig. 42—the horizontal section. These tubes are prop stays of the strongest possible form for resisting any collapse of the fire flue, and are therefore worthy of the attention of our steamboat engineers.

A is the frame, and B is a steam cylinder on the top of the main boiler. These tubes assist in causing the flame to envelope them and render the fuel more effective.

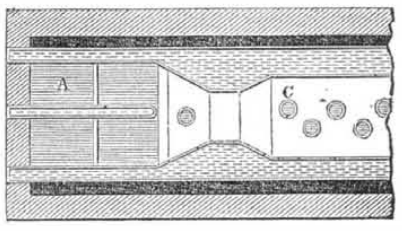
Fig. 41.



This boiler is more suitable for bituminous coal and wood than for anthracite coal. The smaller the tubes, and the greater number of them, so much the better for coke and anthracite coal, where the heated air alone acts upon the exposed surface of the boiler, but for wood and bituminous coal, which make flame, a different arrangement is preferable, and this is a good one. For western steamboats, this boiler is a good one and worthy of attention. The conical form of the tubes, with the enlarged part uppermost, is also a plausible advantage, inasmuch as the heat is most effective upon the upper surface, which over-hangs the source of the heat.

This boiler is much improved, as all other steam boilers would be, by having two furnaces. In the plan view, a division wall is exhibited, which permits two furnaces with separate doors to be used. This, for bituminous coal or wood, makes the arrangement a smoke-consuming one. By firing the furnaces alternately, and allowing the fire of the one to be strong, and the fuel fully ignited, when the fuel is fed into the other furnace, the carbonic oxide or smoke, which is always given off in volumes when the fuel is just laid on, is ignited by the clear flame of the other furnace, which has more oxygen in it, and thus the

Fig 42.



smoke is consumed and a greater heat produced by the same quantity of fuel. This boiler is one which was recommended by Armstrong, as stated in his work on steam boilers, to the Gutta Percha Works in London, and was 50 horse-power. Its length is 30 feet 3 inches, is 10 feet diameter, and its main flue at its great diameter is 4½ feet. It contained 13 conical tubes, 11 inches in diameter at top, and 9 inches at bottom. The furnace grates are 7 feet 4 inches long, by 2 feet 7 inches wide, making 37 square feet area, or at the rate of three-quarters of a square foot of grate per horse-power. The flue and shell of the boiler are alike thick, half an inch. The fire bars are in two sets, front and back; the front ribs one inch, and the back ones one inch and a quarter thick, with draught spaces between of three-eighths of an inch width. The boiler is clothed with a non-conducting covering of saw-dust and brickwork. The steam dome or cylinder is 12 feet long and 3½ feet in diameter, and covered with felt. The ends of the boiler are strengthened by wrought-iron double ribs, reaching from side to side and rivetted on them, and to which the wrought-iron stays are attached, extending the whole length of the boiler and brace the two ends together.

Looking-Glasses for Birds.

A correspondent of the Gardeners' Chronicle says:—

"The following plan is perfectly efficacious for scaring birds from fruit and other produce. One of my servants having by chance broken a looking-glass, it occurred to me that the broken pieces, suspended by a string, so as to turn freely in every direction, would give the appearance of something moving about, which would alarm the birds. I accordingly tried the plan, and found that no bird not even the most cool-hardy of them, dare come near. They had attacked my peas; on suspending a few bits of looking-glass amongst them, the marauders left the place. The tomtits attacked my seckle pears, to which they seem very partial. A bit of looking-glass suspended in front of the tree put a stop to the mischief. My grapes were then much damaged, before they were ripe by thrushes and starlings; a piece of looking-glass drove these away, and not a grape was touched, afterwards. I had before tried many plans, but never found any so effectual as the above."

Another Small Planet.

J. R. Hind writes to the Times, that on the 17th March, another small planet was discovered by Prof. de Gasparis, at the Royal Observatory at Naples. The planet is stated to be equal in brightness to a star of between the tenth and eleventh magnitude. Mr. Hind has little doubt that this planet is identical with an object which he entered upon a chart for the tenth hour of right ascension, on the 29th January last, in R. A. 10h. 32m. 40s. and north declination 8 deg. 50 min., and noted as of eleventh magnitude.

Advice to Writers for the Press.

Use black ink; clear, good paper, written on one side only, in letters large and plain enough to be read like print; and, if you suspect defects in style, grammer, or punctuation, get a friend to correct it, and do not call upon the editor to do it. He has no time, and it is not his business to do it. Be brief and clear, which you cannot be if you do not fully understand your subject, in which case, let your pen remain dry rather than write for any periodical.

Ten Hour System.

Three several reports have been made to the Massachusetts House of Representatives on the subject of restricting labor in manufacturing corporations to ten hours a day. The reports all came from the same committee—a special committee, to whom the subject was referred. One report was, that any legislation in the premises was inexpedient; a second report embraced a bill providing for gradual emancipation; in this way, until the 4th of July next, operatives may be employed twelve hours; from that time till October 1st, eleven hours; and thereafter not more than ten, except "in necessary cases," under penalty of $50 for each offence. A third report recommended ten hours, except where express contracts have been made for a longer time, and a fine for employing children, under fifteen, more than ten hours a day.

LITERARY NOTICES.

HUNT'S PHOTOGRAPHY—This work, the best ever published on this subject, is re-published here by S. D. Humphrey, 297 Broadway. The author is well known for his researches on light, and his work named "The Poetry of Science." It contains an early history of Photography. We find it there recorded that the Daguerreotype was protected by a patent in England, although the French Academy of Sciences had paid highly for it, to make a present of the process to the world. No one who has a taste for optics, or any branch of philosophy, should be without this work, and certainly no photographist can be intelligent in his business, and not own it. This puts us in mind of one thing—the Hillotype. What has become of the Rev. Mr. Hill and his wonderful discovery of colored daguerreotypes?

THE MODEL CALCULATOR—This very able work, by Oliver Byne, C. E., and published by H. C. Baird, of Philadelphia, is now completed. We noticed this work as it came out in numbers, and spoke favorably of its merits. It is a work which every mechanic should possess. Its tables of logarithmic sines, etc., are far better than those in any work on Trigonometry published in our country; it contains calculations for every thing. It is unique in every respect—the Model Calculator. It is for sale by John S. Taylor, 143 Nassau st., N. Y.

LITTELL'S LIVING AGE—This is by far the best weekly magazine published in our land: it is reprint of the cream of English literature. In No. 414, of last week, there are some most able and excellent articles. Dewitt & Davenport are the agents in this city.

GRAHAM'S MAGAZINE, for May, is a gem number; the embellishments are numerous and exceedingly beautiful, and the contributions are from the best American authors. This magazine occupies a high place among the serial publications of the world. G. R. Graham, Philadelphia; Dewitt & Davenport, New York.

PETERSON'S LADIES' NATIONAL MAGAZINE has been sent us by Dewitt & Davenport: "The May Scene" is pretty, and the contributions are spirited. Good number.

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